S/N 10/586,969

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PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

| | | |
|---|---|---|
| NEWS 1 | | Web Page for STN Seminar Schedule - N. America |
| NEWS 2 | OCT 02 | CA/CAplus enhanced with pre-1907 records from Chemisches Zentralblatt |
| NEWS 3 | OCT 19 | BEILSTEIN updated with new compounds |
| NEWS 4 | NOV 15 | Derwent Indian patent publication number format enhanced |
| NEWS 5 | NOV 19 | WPIX enhanced with XML display format |
| NEWS 6 | NOV 30 | ICSD reloaded with enhancements |
| NEWS 7 | DEC 04 | LINPADOCDB now available on STN |
| NEWS 8 | DEC 14 | BEILSTEIN pricing structure to change |
| NEWS 9 | DEC 17 | USPATOLD added to additional database clusters |
| NEWS 10 | DEC 17 | IMSDRUGCONF removed from database clusters and STN |
| NEWS 11 | DEC 17 | DGENE now includes more than 10 million sequences |
| NEWS 12 | DEC 17 | TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment |
| NEWS 13 | DEC 17 | MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary |
| NEWS 14 | DEC 17 | CA/CAplus enhanced with new custom IPC display formats |
| NEWS 15 | DEC 17 | STN Viewer enhanced with full-text patent content from USPATOLD |
| NEWS 16 | JAN 02 | STN pricing information for 2008 now available |
| NEWS 17 | JAN 16 | CAS patent coverage enhanced to include exemplified prophetic substances |
| NEWS 18 | JAN 28 | USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats |
| NEWS 19 | JAN 28 | MARPAT searching enhanced |
| NEWS 20 | JAN 28 | USGENE now provides USPTO sequence data within 3 days of publication |
| NEWS 21 | JAN 28 | TOXCENTER enhanced with reloaded MEDLINE segment |
| NEWS 22 | JAN 28 | MEDLINE and LMEDLINE reloaded with enhancements |
| NEWS 23 | FEB 08 | STN Express, Version 8.3, now available |
| NEWS 24 | FEB 20 | PCI now available as a replacement to DPCI |
| NEWS 25 | FEB 25 | IFIREF reloaded with enhancements |
| NEWS 26 | FEB 25 | IMSPRODUCT reloaded with enhancements |

NEWS EXPRESS FEBRUARY 08 CURRENT WINDOWS VERSION IS V8.3,
AND CURRENT DISCOVER FILE IS DATED 20 FEBRUARY 2008

| | |
|---|---|
| NEWS HOURS | STN Operating Hours Plus Help Desk Availability |
| NEWS LOGIN | Welcome Banner and News Items |
| NEWS IPC8 | For general information regarding STN implementation of IPC 8 |

Enter NEWS followed by the item number or name to see news on that specific topic.

* * * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 18:55:35 ON 28 FEB 2008

=> set abbr on perm
SET COMMAND COMPLETED

=> set plurals on perm
SET COMMAND COMPLETED

=> file inpadoc japio
COST IN U.S. DOLLARS SINCE FILE ENTRY 0.21 TOTAL SESSION 0.21
FULL ESTIMATED COST

FILE 'INPADOCDB' ENTERED AT 18:56:07 ON 28 FEB 2008
COPYRIGHT (C) 2008 European Patent Office / FIZ Karlsruhe

FILE 'JAPIO' ENTERED AT 18:56:07 ON 28 FEB 2008
COPYRIGHT (C) 2008 Japanese Patent Office (JPO)- JAPIO

=> s jp 06157627/pn
L1 2 JP 06157627/PN

=> d l1 1-2 all

L1 ANSWER 1 OF 2 INPADOCDB COPYRIGHT 2008 EPO/FIZ KA on STN

AN 32454048 INPADOCDB UP 20061203
TI PRODUCTION OF POLYSTYRENE HAVING REACTIVE GROUP.
TL English
IN HIGASHIMURA TOSHINOBU; SAWAMOTO MITSUO; UEGAKITO MASAMI; MIYASHITA KAZUAKI
INS HIGASHIMURA TOSHINOBU; SAWAMOTO MITSUO; UEGAKITO MASAMI; MIYASHITA KAZUAKI
PA HIGASHIMURA TOSHINOBU
PAS HIGASHIMURA TOSHINOBU
DT Patent
PI JP 06157627 A 19940607
PIT JPA DOC. LAID OPEN TO PUBL. INSPEC. [PUBLISHED FROM 1971 ON]
DAV 19940607 unexamined-printed-without-grant
STA PRE-GRANT PUBLICATION
AI JP 1992-332178 A 19921119
AIT JPA Patent application
PRAI JP 1992-332178 A 19921119 (JPA)
PRAIT JPA Patent application
IC,V 5
ICM C08F004-06
ICS C08F012-00
IPCR C08F0004-06 [I,A]; C08F0012-00 [I,A]; C08F0012-08 [I,A]
C08F0004-00 [I,C*]; C08F0012-00 [I,C*]
EPC C08F0012-08+4/16
FA AI; AN; DAV; DT; EPC; ICM; ICS; IN; INS; IPC; IPCR; PA; PAS; PI; PIT; PRAI; TI

L1 ANSWER 2 OF 2 JAPIO (C) 2008 JPO on STN
AN 1994-157627 JAPIO
TI PRODUCTION OF POLYSTYRENE HAVING REACTIVE GROUP
IN HIGASHIMURA TOSHINOBU; SAWAMOTO MITSUO; UEGAKITO MASAMI; MIYASHITA KAZUAKI
PA HIGASHIMURA TOSHINOBU
PI JP 06157627 A 19940607 Heisei
AI JP 1992-332178 (JP04332178 Heisei) 19921119
PRAI JP 1992-332178 19921119
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994
IC ICM C08F004-06
ICS C08F012-00
AB PURPOSE: To produce polystyrene having a nucleophilic reactive group by subjecting styrene to a living cationic polymerization in the presence of a quaternary ammonium salt and a specific polymerization initiator.
CONSTITUTION: Styrene is subjected to a living cationic polymerization at from -80°C to room temperature in a solvent in the presence of a polymerization initiator comprising 1mol of an organohalogen compound of the formula (wherein X is halogen; and Y is a reactive group) and 1-10mol of a metal halide having a Lewis acidity and a quaternary ammonium salt in an amount of 0.01-5mol based on 1mol of the organohalogen compound
COPYRIGHT: (C)1994,JPO&Japio

=> FIL STNGUIDE
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST 6.84 7.05

FILE 'STNGUIDE' ENTERED AT 18:56:57 ON 28 FEB 2008
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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 22, 2008 (20080222/UP).

=> log y
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST 0.66 7.71

STN INTERNATIONAL LOGOFF AT 19:03:41 ON 28 FEB 2008

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:sssptaul55fxt

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

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 NEWS  1          Web Page for STN Seminar Schedule - N. America
 NEWS  2  OCT 02  CA/CAplus enhanced with pre-1907 records from Chemisches
                  Zentralblatt
 NEWS  3  OCT 19  BEILSTEIN updated with new compounds
 NEWS  4  NOV 15  Derwent Indian patent publication number format enhanced
 NEWS  5  NOV 19  WPIX enhanced with XML display format
 NEWS  6  NOV 30  ICSD reloaded with enhancements
 NEWS  7  DEC 04  LINPADOCDB now available on STN
 NEWS  8  DEC 14  BEILSTEIN pricing structure to change
 NEWS  9  DEC 17  USPATOLD added to additional database clusters
 NEWS 10  DEC 17  IMSDRUGCONF removed from database clusters and STN
 NEWS 11  DEC 17  DGENE now includes more than 10 million sequences
 NEWS 12  DEC 17  TOXCENTER enhanced with 2008 MeSH vocabulary in
                  MEDLINE segment
 NEWS 13  DEC 17  MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
 NEWS 14  DEC 17  CA/CAplus enhanced with new custom IPC display formats
 NEWS 15  DEC 17  STN Viewer enhanced with full-text patent content
                  from USPATOLD
 NEWS 16  JAN 02  STN pricing information for 2008 now available
 NEWS 17  JAN 16  CAS patent coverage enhanced to include exemplified
                  prophetic substances
 NEWS 18  JAN 28  USPATFULL, USPAT2, and USPATOLD enhanced with new
                  custom IPC display formats
 NEWS 19  JAN 28  MARPAT searching enhanced
 NEWS 20  JAN 28  USGENE now provides USPTO sequence data within 3 days
                  of publication
 NEWS 21  JAN 28  TOXCENTER enhanced with reloaded MEDLINE segment
 NEWS 22  JAN 28  MEDLINE and LMEDLINE reloaded with enhancements
 NEWS 23  FEB 08  STN Express, Version 8.3, now available
 NEWS 24  FEB 20  PCI now available as a replacement to DPCI
 NEWS 25  FEB 25  IFIREF reloaded with enhancements
 NEWS 26  FEB 25  IMSPRODUCT reloaded with enhancements


 NEWS EXPRESS FEBRUARY 08 CURRENT WINDOWS VERSION IS V8.3,
              AND CURRENT DISCOVER FILE IS DATED 20 FEBRUARY 2008

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that
specific topic.

  All use of STN is subject to the provisions of the STN Customer
  agreement.  Please note that this agreement limits use to scientific
  research.  Use for software development or design or implementation
  of commercial gateways or other similar uses is prohibited and may
  result in loss of user privileges and other penalties.

* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 14:33:46 ON 29 FEB 2008

=> set abbr on perm
SET COMMAND COMPLETED

=> set plurals on perm
SET COMMAND COMPLETED
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=> file uspatall caplus japio
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.42       0.42

FILE 'USPATFULL' ENTERED AT 14:34:41 ON 29 FEB 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPATOLD' ENTERED AT 14:34:41 ON 29 FEB 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 14:34:41 ON 29 FEB 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'CAPLUS' ENTERED AT 14:34:41 ON 29 FEB 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE 'JAPIO' ENTERED AT 14:34:41 ON 29 FEB 2008
COPYRIGHT (C) 2008 Japanese Patent Office (JPO)- JAPIO

=> s (poly? or copoly?)(1a)(divinyl benzene# or divinylbenzene# or divinyl
naphthalene# or divinylnaphthalene# or di(1w)isopropenyl benzene or
diisopropenylbenzene)
L1       35313 (POLY? OR COPOLY?)(1A)(DIVINYL BENZENE# OR DIVINYLBENZENE# OR
               DIVINYL NAPHTHALENE# OR DIVINYLNAPHTHALENE# OR DI(1W) ISOPROPENY
               L BENZENE OR DIISOPROPENYLBENZENE)

=> s (poly? or copoly?)(s)(indan### or inden###)
L2       32448 (POLY? OR COPOLY?)(S)(INDAN### OR INDEN###)

=> s l1 and l2
L3        1068 L1 AND L2

=> s (divinyl benzene# or divinylbenzene# or divinyl naphthalene# or
divinylnaphthalene# or di(1w)isopropenyl benzene or
diisopropenylbenzene)(s)(indan## or inden##)
L4         922 (DIVINYL BENZENE# OR DIVINYLBENZENE# OR DIVINYL NAPHTHALENE# OR
               DIVINYLNAPHTHALENE# OR DI(1W) ISOPROPENYL BENZENE OR DIISOPROPEN
               YLBENZENE)(S)(INDAN## OR INDEN##)

=> s l3 and l4
L5         201 L3 AND L4

=> s l5 and cation?(4a)(poly? or initiat? or cataly?)
L6          41 L5 AND CATION?(4A)(POLY? OR INITIAT? OR CATALY?)

=> d l6 1-41 ibib abs

L6   ANSWER 1 OF 41  USPATFULL on STN
ACCESSION NUMBER:       2007:178102  USPATFULL
TITLE:                  Soluble polyfunctional vinyl aromatic polymer and
                        method of producing the same
INVENTOR(S):            Kawabe, Masanao, Fukuoka, JAPAN
PATENT ASSIGNEE(S):     NIPPON STEEL CHEMICAL CO., LTD., Tokyo, JAPAN (non-U.S.
                        corporation)

                             NUMBER       KIND    DATE
                        ---------------- ------ --------
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| | | | |
|---|---|---|---|
| PATENT INFORMATION: | US 2007155923 | A1 | 20070705 |
| APPLICATION INFO.: | US 2005-586969 | A1 | 20050126 (10) |
| | WO 2005-JP1000 | | 20050126 |
| | | | 20060725 PCT 371 date |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 2004-24154 | 20040130 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP, 1725 K STREET, NW, SUITE 1000, WASHINGTON, DC, 20006, US
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
LINE COUNT: 1453
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a soluble polyfunctional vinylaromatic copolymer improved in heat resistance, resistance to thermal decomposition, solvent solubility, and processability. The soluble polyfunctional vinylaromatic polymer is obtained by cationically polymerizing, at a temperature of 20 to 120° C., one or more monomer ingredients including 20 to 100 mol % divinylaromatic compound (a) in the presence of a donor ingredient, e.g., a quaternary ammonium salt, with the aid of a Lewis acid catalyst and an initiator represented by the following general formula (1) ##STR1## wherein R.sup.1 represents hydrogen or a monovalent C.sub.1-6 hydrocarbon group; R.sup.2 represents an aromatic or aliphatic hydrocarbon group having a valence of p; Z represents halogen or C.sub.1-6 alkoxy or acyloxy; and p is an integer of 1 to 6; provided that when two or more R.sup.1's and Z's are present per molecule, they may be identical to different from each other.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2007:155377 USPATFULL
TITLE: Heteroatom bridged metallocene compounds for olefin polymerization
INVENTOR(S): Voskoboynikov, Alexander Z., Moscow, RUSSIAN FEDERATION
Izmer, Vyatcheslav V., Moscow, RUSSIAN FEDERATION
Asachenko, Andrey F., Chelyabinsk, RUSSIAN FEDERATION
Nikulin, Mikhail V., Moscow, RUSSIAN FEDERATION
Ryabov, Alexey N., Moscow, RUSSIAN FEDERATION
Lebedev, Artyom Y., Moscow, RUSSIAN FEDERATION
Coker, Catalina L., Baytown, TX, UNITED STATES
Canich, Jo Ann M., Houston, TX, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2007135597 | A1 | 20070614 |
| APPLICATION INFO.: | US 2005-302998 | A1 | 20051214 (11) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: EXXONMOBIL CHEMICAL COMPANY, 5200 BAYWAY DRIVE, P.O. BOX 2149, BAYTOWN, TX, 77522-2149, US
NUMBER OF CLAIMS: 286
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Page(s)
LINE COUNT: 13702
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to a transition metal compound represented by the formula: ##STR1## wherein M is a group 3, 4, 5 or 6 transition metal atom, or a lanthanide metal atom, or actinide metal atom; E is: 1) a substituted or unsubstituted indenyl ligand that is bonded to Y through the four, five, six or seven position of the indenyl ring, or 2) a substituted or unsubstituted heteroindenyl ligand that is bonded to Y through the four, five or six position of the heteroindenyl ring, provided that the bonding position is not the same as the position of the ring heteroatom, or 3) a substituted or unsubstituted fluorenyl ligand that is bonded to Y through the one, two, three, four, five, six, seven or eight position of the fluorenyl ring, or 4) a substituted or unsubstituted heterofluorenyl ligand that is bonded to Y through the one, two, three, four, five or six position of the heteroindenyl ring, provided that the bonding position is not the same as the position of the ring heteroatom; A is a substituted or unsubstituted cyclopentadienyl ligand, a substituted or unsubstituted heterocyclopentadienyl ligand, a substituted or unsubstituted indenyl ligand, a substituted or unsubstituted heteroindenyl ligand, a substituted or unsubstituted fluorenyl ligand, a substituted or unsubstituted heterofluorenyl ligand, or other mono-anionic ligand; Y is a Group 15 or 16 bridging heteroatom substituent that is bonded via the heteroatom to E and A; and X are, independently, univalent anionic ligands, or both X are joined and bound to the metal atom to form a metallocycle ring, or both X join to form a chelating ligand, a diene ligand, or an alkylidene ligand. This invention further relates to catalyst systems comprising the above transiotioon metal compounds, activators and optional supports and their use to polymerize or oligomerize olefins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 3 OF 41 USPATFULL on STN

| | |
|---|---|
| ACCESSION NUMBER: | 2007:155376 USPATFULL |
| TITLE: | Preparation of substituted bridged indenyl and related ligands |
| INVENTOR(S): | Voskoboynikov, Alexander Z., Moscow, RUSSIAN FEDERATION<br>Nikulin, Mikhail V., Moscow, RUSSIAN FEDERATION<br>Ryabov, Alexey N., Moscow, RUSSIAN FEDERATION<br>Lygin, Alexander V., Moscow, RUSSIAN FEDERATION<br>Coker, Catalina L., Baytown, TX, UNITED STATES<br>Canich, Jo Ann M., Houston, TX, UNITED STATES |

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2007135596 | A1 | 20070614 |
| APPLICATION INFO.: | US 2005-302846 | A1 | 20051214 (11) |

| | |
|---|---|
| DOCUMENT TYPE: | Utility |
| FILE SEGMENT: | APPLICATION |
| LEGAL REPRESENTATIVE: | EXXONMOBIL CHEMICAL COMPANY, 5200 BAYWAY DRIVE, P.O. BOX 2149, BAYTOWN, TX, 77522-2149, US |
| NUMBER OF CLAIMS: | 82 |
| EXEMPLARY CLAIM: | 1 |
| LINE COUNT: | 5039 |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process for preparing a chelating ligand of the formula (II) from a chelating ligand of the formula (I) via an sp.sup.2-sp.sup.2 or sp.sup.2-sp.sup.3 coupling reaction with an organometallic compound of the formula (III). ##STR1## wherein B is a bridging group that is bonded to L.sup.1 and L.sup.2 in formula (I) and to L.sup.3 and L.sup.4 in formula (II); L.sup.1 is a substituted monocyclic or polycyclic

ligand that comprises at least one chlorine, bromine, iodine, or sulfonate substituent, directly bonded to an sp.sup.2 carbon atom of the ring structure of the ligand; L.sup.2 is a monoanionic ligand; or L.sup.2 may, independently, be defined as L.sup.1; L.sup.3 is the same group as L.sup.1, but said at least one chlorine, bromine, iodine, or sulfonate substituent is replaced with a hydrocarbyl, substituted hydrocarbyl, halocarbyl, or substituted halocarbyl fragment; L.sup.4 is the same group as L.sup.2, though, when L.sup.2 is defined as L.sup.1, L.sup.4 may be the same as L.sup.3 or L.sup.1; R.sup.1 is a hydrocarbyl, substituted hydrocarbyl, halocarbyl, or substituted halocarbyl; M.sup.1 is an element of group 1, 2, 12, 13 or 14 of the Periodic Table of the Elements; each X.sup.2, if present, is selected independently from the group consisting of halogen atoms, the hydroxyl group, alkoxy groups, aryloxy groups, mesylate, tosylate and triflate; r is 1, 2 or 3, and t is 0, 1 or 2, where r+t corresponds to the oxidation number of M.sup.1.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 41 USPATFULL on STN

| | | | | |
|---|---|---|---|---|
| ACCESSION NUMBER: | 2006:316032 USPATFULL | | | |
| TITLE: | Polymerization of diisopropenylbenzene | | | |
| INVENTOR(S): | Ittel, Steven Dale, Wilmington, DE, UNITED STATES<br>Gridnev, Alexei A., Wilmington, DE, UNITED STATES | | | |
| | NUMBER | KIND | DATE | |
| PATENT INFORMATION: | US 2006270815 | A1 | 20061130 | |
| APPLICATION INFO.: | US 2005-140130 | A1 | 20050527 | (11) |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | APPLICATION | | | |
| LEGAL REPRESENTATIVE: | E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805, US | | | |
| NUMBER OF CLAIMS: | 26 | | | |
| EXEMPLARY CLAIM: | 1 | | | |
| LINE COUNT: | 810 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Processes for preparing substantially linear polymers from diisopropenylbenzenes are provided. The polymers are useful in making a variety of products, including coatings, pigment dispersing agents, and stabilizers.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 5 OF 41 USPATFULL on STN

| | | | | |
|---|---|---|---|---|
| ACCESSION NUMBER: | 2004:190907 USPATFULL | | | |
| TITLE: | Cross-copolymerized olefin/aromatic vinyl compound/diene copolymer and process for its production | | | |
| INVENTOR(S): | Arai, Toru, Machida-shi, JAPAN<br>Otsu, Toshiaki, Machida-shi, JAPAN<br>Nakajima, Masataka, Machida-shi, JAPAN | | | |
| PATENT ASSIGNEE(S): | Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, JAPAN (non-U.S. corporation) | | | |
| | NUMBER | KIND | DATE | |
| PATENT INFORMATION: | US 2004147681 | A1 | 20040729 | |
| | US 6878779 | B2 | 20050412 | |
| APPLICATION INFO.: | US 2004-759084 | A1 | 20040120 | (10) |

RELATED APPLN. INFO.: Division of Ser. No. US 2002-78668, filed on 21 Feb 2002, PENDING Continuation-in-part of Ser. No. US 2001-831358, filed on 14 May 2001, GRANTED, Pat. No. US 6566453 A 371 of International Ser. No. WO 2000-JP6284, filed on 13 Sep 2000, UNKNOWN

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1999-258618 | 19990913 |
| | JP 2000-184053 | 20000620 |
| | JP 2001-44715 | 20010221 |
| | JP 2001-221247 | 20010723 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C., 1940 DUKE STREET, ALEXANDRIA, VA, 22314
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Page(s)
LINE COUNT: 2661
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A highly uniform vinyl compound polymer-cross-copolymerized olefin/styrene/diene copolymer excellent in processability, mechanical properties, high temperature properties, compatibility and transparency, and its composition and a process for its production, are provided. This copolymer is a crossed polymer obtained by cross-copolymerizing an olefin/styrene/diene copolymer having a styrene content of from 0.03 mol % to 96 mol %, a diene content of from 0.0001 mol % to 3 mol % and the rest being an olefin, with an olefin/aromatic vinyl compound copolymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 6 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:174274 USPATFULL
TITLE: Process for the preparation of tertiary alcohols by the hydration of tertiary olefins in a reactive rectification using a structured multi-purpose packing
INVENTOR(S): Gohrt, Axel, Koln, GERMANY, FEDERAL REPUBLIC OF
Grub, Joachim, Dormagen, GERMANY, FEDERAL REPUBLIC OF
Kaminsky, Stefan, Dormagen, GERMANY, FEDERAL REPUBLIC OF
Muller, Stephan, Pulheim, GERMANY, FEDERAL REPUBLIC OF
Schwegler, Brian, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
PATENT ASSIGNEE(S): BP Koln GmbH (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003120123 | A1 | 20030626 |
| | US 6951967 | B2 | 20051004 |
| APPLICATION INFO.: | US 2003-365497 | A1 | 20030213 (10) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 2001-974059, filed on 11 Oct 2001, ABANDONED

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | DE 2000-10050627 | 20001012 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP,

1300 I STREET, NW, WASHINGTON, DC, 20005
NUMBER OF CLAIMS: 9
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Page(s)
LINE COUNT: 464
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Tertiary alcohols can be prepared by the hydration of tertiary olefins having the same number of carbon atoms on an acidic ion exchanger using special structured multi-purpose packings for heterogeneous reactive rectification. An excellent yield and purity of the alcohol and an extended service life of the catalyst are achieved.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 7 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:137123 USPATFULL
TITLE: Cross-copolymerized olefin/aromatic vinyl/diene copolymer and process for producing the same
INVENTOR(S): Arai, Toru, Machida, JAPAN
Nakajima, Masataka, Machida, JAPAN
Otsu, Toshiaki, Machida, JAPAN
PATENT ASSIGNEE(S): Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 6566453 | B1 | 20030520 | |
| | WO 2001019881 | | 20010322 | |
| APPLICATION INFO.: | US 2001-831358 | | 20010514 | (9) |
| | WO 2000-JP6284 | | 20000913 | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1999-258618 | 19990913 |
| | JP 2000-184053 | 20000620 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Seidleck, James J.
ASSISTANT EXAMINER: Asinovsky, Olga
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 78
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 9 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 2129
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A highly uniform vinyl compound polymer-cross-copolymerized olefin/styrene/diene copolymer excellent in processability, mechanical properties, high temperature properties, compatibility and transparency, and its composition and a process for its production, are provided. This copolymer is a crossed polymer obtained by cross-copolymerizing an olefin/styrene/diene copolymer having a styrene content of from 0.03 mol % to 96 mol %, a diene content of from 0.0001 mol % to 3 mol % and the rest being an olefin, with an olefin/aromatic vinyl compound copolymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 8 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:136891 USPATFULL
TITLE: Quintessential pictorial label and its distribution
INVENTOR(S): Bourdelais, Robert P., Pittsford, NY, United States

Nair, Mridula, Penfield, NY, United States
Rochford, William T., Rochester, NY, United States
Rieger, John B., Webster, NY, United States
PATENT ASSIGNEE(S): Eastman Kodak Company, Rochester, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6566024 | B1 | 20030520 |
| APPLICATION INFO.: | US 2001-27971 | | 20011221 (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Schilling, Richard L.
LEGAL REPRESENTATIVE: Leipold, Paul A.
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 2677
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates a photographic label comprising a pragmatic polymer sheet, at least one layer comprising an image comprising dyes formed from couplers above said pragmatic polymer sheet, and a lower strippable paper carrier, a pressure sensitive adhesive layer between said lower strippable carrier and said pragmatic polymer sheet, and an environmental protection layer overlaying at least one photosensitive layer wherein said carrier has exposed edges where it has a greater surface area than the pragmatic sheet and said image further comprises fiducial marks.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 9 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:126996 USPATFULL
TITLE: Crease resistant imaging element with coated paper base
INVENTOR(S): Bourdelais, Robert P., Pittsford, NY, UNITED STATES
Aylward, Peter T., Hilton, NY, UNITED STATES
Mruk, Geoffrey, Rochester, NY, UNITED STATES
PATENT ASSIGNEE(S): Eastman Kodak Company (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003087208 | A1 | 20030508 |
| | US 6589720 | B2 | 20030708 |
| APPLICATION INFO.: | US 2001-45712 | A1 | 20011029 (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Paul A. Leipold, Patent Legal Staff, Eastman Kodak Company, 343 State Street, Rochester, NY, 14650-2201
NUMBER OF CLAIMS: 39
EXEMPLARY CLAIM: 1
LINE COUNT: 2400
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to an imaging element comprising a coated coated paper base, a lower biaxially oriented sheet, and an upper biaxially oriented sheet.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 10 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:123386 USPATFULL

TITLE: Cross-copolymerized olefin/styrene/diene copolymer, process for the production of the same and uses thereof
INVENTOR(S): Arai, Toru, Tokyo, JAPAN
Nakajima, Masataka, Tokyo, JAPAN
Otsu, Toshiaki, Tokyo, JAPAN
PATENT ASSIGNEE(S): Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6559234 | B1 | 20030506 |
| | WO 2000037517 | | 20000629 |
| APPLICATION INFO.: | US 2001-831380 | | 20010517 (9) |
| | WO 1999-JP7239 | | 19991222 |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1998-365362 | 19981222 |
| | JP 1999-258618 | 19990913 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Seidleck, James J.
ASSISTANT EXAMINER: Asinovsky, Olga
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 86
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 12 Drawing Figure(s); 11 Drawing Page(s)
LINE COUNT: 4150
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention firstly provides a novel olefin/styrene/diene type cross-copolymer having excellent physical properties and mechanical properties, and a novel, efficient and economically excellent process for its production. Further, it provides an efficient and economically excellent process for producing various cross-copolymers such as an olefin/diene type cross-copolymer.

The present invention secondly provides various resin compositions or processed products containing cross-copolymers, having problems of various conventional resin compositions or processed products solved and improved, as applications of cross-copolymers of the present invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 11 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:100273 USPATFULL
TITLE: Preparation of polyindanebisphenols and polymers derived therefrom
INVENTOR(S): McCarthy, Thomas F., Bonnington, UT, UNITED STATES
Schwind, David, Randolph, NJ, UNITED STATES
Smith, Gordon, Arlington Hts., IL, UNITED STATES
PATENT ASSIGNEE(S): Honeywell International Inc. (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003069384 | A1 | 20030410 |
| | US 6858304 | B2 | 20050222 |
| APPLICATION INFO.: | US 2002-163834 | A1 | 20020605 (10) |

RELATED APPLN. INFO.: Division of Ser. No. US 2000-656430, filed on 6 Sep 2000, ABANDONED Division of Ser. No. US 1998-31286, filed on 26 Feb 1998, GRANTED, Pat. No. US 6153721

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Sandra P. Thompson, Rutan & Tucker, LLP, 14th Floor, 611 Anton Blvd., Costa Mesa, CA, 92626
NUMBER OF CLAIMS: 31
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 1119
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel polyindanebisphenols or PIBPs for the preparation of new and improved thermosetting polymers having the general formula of ##STR1##

are provided. Also disclosed are thermoplastic or thermoset compositions prepared using the novel compounds of the invention, as well as methods of making and using the same. When copolymerized or reactive with other commercial resins such as, e.g., epoxy compounds, PIBP based polymers are characterized by high glass transition temperature ("Tg"), low dielectric constant, low moisture absorption, low coefficient of expansion, low cost, and can be processed on equipment typically used for the production of epoxy based laminates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 12 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:50960 USPATFULL
TITLE: Image making medium
INVENTOR(S): Hyman, Sydney, New York, NY, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003035917 | A1 | 20030220 |
| APPLICATION INFO.: | US 2002-170503 | A1 | 20020614 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2002-12259, filed on 14 Jun 2002, PENDING Continuation-in-part of Ser. No. WO 2000-US16111, filed on 12 Jun 2000, UNKNOWN | | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1999-138694P | 19990611 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Sydney Hyman, 51 Greene Street, #3, New York, NY, 10013
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 90 Drawing Page(s)
LINE COUNT: 24304
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to an image support medium for creation of an aesthetic image that is an work or object for display. This support medium includes a polymer in an amount sufficient to enable the image to have at least one aesthetic element. In different embodiments, the image support medium is an image support stabilizer, the polymer is a synthetic absorbent or conductive polymer, or the polymer is a transparent or synthetic translucent polymer and a property of this transparent or translucent polymer is enhanced to facilitate the creation or preservation of the image by at least one stabilizer. The invention also relates to a method for preparing this image support medium. The method includes forming a reaction mixture comprising a monomer in an amount sufficient to provide or enable the image to have an aesthetic element, and processing the reaction mixture into a 2- or

3-dimensional shape.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 13 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2003:20049 USPATFULL
TITLE: Preparation of polyindanebisphenols and polymers derived therefrom
INVENTOR(S): McCarthy, Thomas Fitzgerald, Bonnington, VT, United States
Schwind, David, Randolph, NJ, United States
Smith, Gordon, Arlington Hts., IL, United States
PATENT ASSIGNEE(S): Honeywell International Inc., Morristown, NJ, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6509063 | B1 | 20030121 |
| APPLICATION INFO.: | US 2000-656430 | | 20000906 (9) |

RELATED APPLN. INFO.: Division of Ser. No. US 1998-31286, filed on 26 Feb 1998, now patented, Pat. No. US 6153721, issued on 28 Nov 2000
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Cameron, Erma
LEGAL REPRESENTATIVE: Rutan & Tucker, LLP, Thompson, Sandra P., Fish, Robert D.
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1080
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel polyindanebisphenols or PIBPs for the preparation of new and improved thermosetting polymers having the general formula of ##STR1##

are provided. Also disclosed are thermoplastic or thermoset compositions prepared using the novel compounds of the invention, as well as methods of making and using the same. When copolymerized or reactive with other commercial resins such as, e.g., epoxy compounds, PIBP based polymers are characterized by high glass transition temperature ("Tg"), low dielectric constant, low moisture absorption, low coefficient of expansion, low cost, and can be processed on equipment typically used for the production of epoxy based laminates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 14 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2002:288259 USPATFULL
TITLE: Cross-copolymerized olefin/aromatic vinyl compound/diene copolymer and process for its production
INVENTOR(S): Arai, Toru, Tokyo, JAPAN
Otsu, Toshiaki, Tokyo, JAPAN
Nakajima, Masataka, Tokyo, JAPAN
PATENT ASSIGNEE(S): Denki Kagaku Kogyo Kabushiki Kaisha, Chiyoda-ku, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2002161130 | A1 | 20021031 |
| | US 6803422 | B2 | 20041012 |

APPLICATION INFO.: US 2002-78668 A1 20020221 (10)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2001-831358, filed on 14 May 2001, PENDING A 371 of International Ser. No. WO 2000-JP6284, filed on 13 Sep 2000, UNKNOWN

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1999-258618 | 19990913 |
| | JP 2000-184053 | 20000620 |
| | JP 2001-44715 | 20010221 |
| | JP 2001-221247 | 20010723 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC, FOURTH FLOOR, 1755 JEFFERSON DAVIS HIGHWAY, ARLINGTON, VA, 22202
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Page(s)
LINE COUNT: 2656
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A highly uniform vinyl compound polymer-cross-copolymerized olefin/styrene/diene copolymer excellent in processability, mechanical properties, high temperature properties, compatibility and transparency, and its composition and a process for its production, are provided. This copolymer is a crossed polymer obtained by cross-copolymerizing an olefin/styrene/diene copolymer having a styrene content of from 0.03 mol % to 96 mol %, a diene content of from 0.0001 mol % to 3 mol % and the rest being an olefin, with an olefin/aromatic vinyl compound copolymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 15 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2002:141649 USPATFULL
TITLE: Process for the preparation of tertiary alcohols by the hydration of tertiary olefins in a reactive rectification using a structured multi-purpose packing
INVENTOR(S): Gohrt, Axel, Koln, GERMANY, FEDERAL REPUBLIC OF
Grub, Joachim, Dormagen, GERMANY, FEDERAL REPUBLIC OF
Kaminsky, Stefan, Dormagen, GERMANY, FEDERAL REPUBLIC OF
Muller, Stephan, Pulheim, GERMANY, FEDERAL REPUBLIC OF
Schwegler, Brian, Leverkusen, GERMANY, FEDERAL REPUBLIC OF

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2002072638 | A1 | 20020613 |
| APPLICATION INFO.: | US 2001-974059 | A1 | 20011011 (9) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | DE 2000-10050627 | 20001012 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Finnegan, Henderson, Farabow,, Garrett & Dunner, L.L.P., 1300 I Street, N.W., Washington, DC, 20005-3315
NUMBER OF CLAIMS: 9
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Page(s)

LINE COUNT: 463
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Tertiary alcohols can be prepared by the hydration of tertiary olefins having the same number of carbon atoms on an acidic ion exchanger using special structured multi-purpose packings for heterogeneous reactive rectification. An excellent yield and purity of the alcohol and an extended service life of the catalyst are achieved.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 16 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2002:17227 USPATFULL
TITLE: Perfume composition for laundry detergent
INVENTOR(S): Hoshino, Kunihide, Kanagawa, JAPAN
Sakurai, Kazutoshi, Kanagawa, JAPAN
PATENT ASSIGNEE(S): TAKASAGO INTERNATIONAL CORPORATION (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2002010107 | A1 | 20020124 |
| APPLICATION INFO.: | US 2001-866606 | A1 | 20010530 (9) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 2000-160246 | 20000530 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: SUGHRUE, MION, ZINN,, MACPEAK & SEAS, PLLC, 2100 Pennsylvania Avenue, N.W., Washington, DC, 20037-3213
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
LINE COUNT: 450
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a laundry detergent composition capable of retaining an added perfume in a stable manner and exhibiting a sustained laundry odor masking effect. Thus, the invention is a perfume composition for a laundry detergent having a perfume and a hydrophobic polymer and the perfume composition for a laundry detergent further having a cationic surfactant.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 17 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2001:131004 USPATFULL
TITLE: Nacreous imaging material
INVENTOR(S): Aylward, Peter T., Hilton, NY, United States
Camp, Alphonse D., Rochester, NY, United States
Bourdelais, Robert P., Pittsford, NY, United States
PATENT ASSIGNEE(S): Eastman Kodak Company, Rochester, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6274284 | B1 | 20010814 |
| APPLICATION INFO.: | US 1999-470807 | | 19991222 (9) |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Schilling, Richard L.
LEGAL REPRESENTATIVE: Leipold, Paul A.

NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 2001
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to an imaging member comprising an image layer, a voided layer below said image layer, and below said voided layer a layer comprising white pigment wherein said imaging member is substantially free of white pigment above said voided layer, and said voided layer comprises a polymer matrix and voids containing gas.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 18 OF 41 USPATFULL on STN
ACCESSION NUMBER: 2000:161117 USPATFULL
TITLE: Preparation of polyindanebisphenols and polymers derived therefrom
INVENTOR(S): McCarthy, Thomas F., Lake Hiawatha, NJ, United States
Schwind, David B., Blairstown, NJ, United States
Smith, Gordon C., Arlington Heights, NJ, United States
PATENT ASSIGNEE(S): Honeywell International Inc., Morris Township, NJ, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6153721 | | 20001128 |
| APPLICATION INFO.: | US 1998-31286 | | 19980226 (9) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Morris, Terrel
ASSISTANT EXAMINER: Guarriello, John J.
LEGAL REPRESENTATIVE: Brueska, Curtis B.
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1125
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel polyindanebisphenols or PIBPs for the preparation of new and improved thermosetting polymers having the general formula of ##STR1## are provided. Also disclosed are thermoplastic or thermoset compositions prepared using the novel compounds of the invention, as well as methods of making and using the same. When copolymerized or reactive with other commercial resins such as, e.g., epoxy compounds, PIBP based polymers are characterized by high glass transition temperature ("Tg"), low dielectric constant, low moisture absorption, low coefficient of expansion, low cost, and can be processed on equipment typically used for the production of epoxy based laminates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 19 OF 41 USPATFULL on STN
ACCESSION NUMBER: 1998:12178 USPATFULL
TITLE: Vapor pocket reactor
INVENTOR(S): Bell, Weldon K., Pennington, NJ, United States
Brown, Stephen H., Princeton, NJ, United States
Daugherty, Frederick E., Gibbstown, NJ, United States
Harandi, Mohsen N., Langhorne, PA, United States
Trewella, Jeffrey C., Kennett Square, PA, United States
PATENT ASSIGNEE(S): Mobil Oil Corporation, Fairfax, VA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5714640 | | 19980203 |
| APPLICATION INFO.: | US 1994-184537 | | 19940121 (8) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wu, Shean C.
LEGAL REPRESENTATIVE: Keen, Malcolm D., Steinberg, Thomas W.
NUMBER OF CLAIMS: 26
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1181
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A condensation reaction process and reactor for converting a plurality of reactants to at least one reaction product having a vapor pressure less than the vapor pressure of the reactants. The process includes heating a liquid phase of the reactants to at least partial vaporization thus forming a vapor phase of the reactants. The vapor phase reactants are passed in a vapor and or condensed state through at least one catalyst bed spaced from the liquid state to form reaction product(s). The reaction product(s) is returned to the liquid phase without additional contact with catalyst.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 20 OF 41 USPATFULL on STN
ACCESSION NUMBER: 94:106949 USPATFULL
TITLE: Process for producing esterified alkoxylated monoglycerides and diglycerides
INVENTOR(S): Cooper, Charles F., Paoli, PA, United States
PATENT ASSIGNEE(S): Arco Chemical Technology, L.P., Wilmington, DE, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5371253 | | 19941206 |
| APPLICATION INFO.: | US 1993-168546 | | 19931214 (8) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Dees, Jose G.
ASSISTANT EXAMINER: Carr, Deborah D.
LEGAL REPRESENTATIVE: Harper, Stephen D.
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
LINE COUNT: 654
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Esterified alkoxylated mono- and diglycerides suitable for use as reduced calorie fat substitutes in food products may be produced by alkoxylating a tertiary alkyl partial ether of glycerin with an epoxide and then reacting the alkoxylated glycerin tertiary alkyl partial ether thereby obtained with a fatty acid under acid-catalyzed conditions. Separate deprotection and esterification steps are not required, resulting in a considerably streamlined process as compared to alternative methods of synthesizing alkoxylated fat substitutes having one or two fatty acid acyl groups attached directly to glycerin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 21 OF 41 USPATFULL on STN

ACCESSION NUMBER: 94:84111 USPATFULL
TITLE: Photocurable compositions of polyindane and 1,3-diisopropenylbenzene, and coating process
INVENTOR(S): Crivello, James V., Clifton Park, NY, United States
PATENT ASSIGNEE(S): Rensselaer Polytechnic Institute, Troy, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5350604 | | 19940927 |
| APPLICATION INFO.: | US 1992-988218 | | 19921209 (7) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: McCamish, Marion E.
ASSISTANT EXAMINER: Koeckert, Arthur H.
LEGAL REPRESENTATIVE: Heslin & Rothenberg
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1,5
LINE COUNT: 416
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process for cationically polymerizing 1,3-diisopropenylbenzene to produce a polymer which is predominantly a polyindane is disclosed. The resulting polyindanes are novel compounds useful as low dielectric constant coatings. Compositions containing 1,3-diisopropenylbenzene and cationic photoinitiators, and optionally containing a polyindane useful for preparing coatings, are disclosed as are processes for coating substrates using the compositions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 22 OF 41 USPATFULL on STN
ACCESSION NUMBER: 91:75762 USPATFULL
TITLE: Polyindanes as processing aid for engineering thermoplastics
INVENTOR(S): Chu, Sung G., Hockessin, DE, United States
Patnaik, Birendra K., West Chester, PA, United States
Shih, Keith S., Newark, DE, United States
PATENT ASSIGNEE(S): Hercules Incorporated, Wilmington, DE, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5049615 | | 19910917 |
| APPLICATION INFO.: | US 1989-448394 | | 19891211 (7) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Bleutge, John C.
ASSISTANT EXAMINER: Buttner, David
LEGAL REPRESENTATIVE: Goldberg, Mark
NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 1
LINE COUNT: 587
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel thermoplastic compositions are provided comprising a blend of a polyindane resin and an engineering thermoplastic such as polyphenylene ethers, polysulfones, polycarbonates, polyether ether ketones, polyarylates, polyamides, polyimides and polyphenylene sulfides. Blends of thermoplastic block copolymers with polyindane resins are also provided. These blends provide improved processability with good physical properties including high impact strength and high heat

distortion temperature.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 23 OF 41 USPATFULL on STN
ACCESSION NUMBER: 81:47820 USPATFULL
TITLE: Process for obtaining isobutene from C.sub.4 -hydrocarbon mixtures containing isobutene
INVENTOR(S): Brunner, Erwin, Ludwigshafen, Germany, Federal Republic of
Schubert, Eckart, Ludwigshafen, Germany, Federal Republic of
Lindner, Alfred, Bobenheim-Roxheim, Germany, Federal Republic of
Merger, Franz, Frankenthal, Germany, Federal Republic of
Volkamer, Klaus, Frankenthal, Germany, Federal Republic of
Strohmeyer, Max, Limburgerhof, Germany, Federal Republic of
Sandrock, Gerhard, Frankenthal, Germany, Federal Republic of
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany, Federal Republic of (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 4287379 | | 19810901 |
| APPLICATION INFO.: | US 1980-137750 | | 19800407 (6) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1980-116554, filed on 29 Jan 1980, now abandoned which is a continuation of Ser. No. US 1978-1294, filed on 29 Dec 1978, now abandoned | | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | DE 1978-2802198 | 19780119 |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Demers, Arthur P.
LEGAL REPRESENTATIVE: Keil & Witherspoon
NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 653
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for obtaining isobutene from a C.sub.4 -hydrocarbon mixture containing isobutene, by reacting the mixture with a primary alcohol in the presence of an acid condensing agent and decomposing the resulting tertiary ether in the presence of an acid catalyst at an elevated temperature, wherein a primary C.sub.3 - or C.sub.4 -alcohol is used.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 24 OF 41 USPATFULL on STN
ACCESSION NUMBER: 79:687 USPATFULL
TITLE: Intrachromospheruloid pigments and processes for producing same
INVENTOR(S): Burke, Jr., deceased, Oliver W., late of Fort Lauderdale, FL, United States BY Norma Scala,

administratrix
Humphreys, Victor T., Pompano Beach, FL, United States
PATENT ASSIGNEE(S): Darrah, Marion, Pompano Beach, FL, United States (U.S. individual)
Houghton, Joseph Y., Pompano Beach, FL, United States (U.S. individual)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 4132561 | | 19790102 |
| APPLICATION INFO.: | US 1976-712257 | | 19760806 (5) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Derrington, James H.
LEGAL REPRESENTATIVE: Hall & Houghton
NUMBER OF CLAIMS: 42
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 4672
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An intrachromospheruloid pigment and a process for producing the same: the intrachromospheruloid pigment consisting essentially of spheruloids of essentially transparent organic polymer material, preferably cross-linked to essential insolubility in any physical solvent, having primary particles of an average size not exceeding 4 microns in diameter which have embedded therein particulate pigment composition consisting essentially of organic color pigment material having primary particles of an average size not exceeding 0.2 micron in diameter. In the process for its production, the organic color pigment material is reduced to an average particle size of 0.2 micron or less, which is well below the normal pigmentary size range, and is then included in an emulsion polymerization of monomer material preferably comprising an effective quantity of cross-linking agent, and the polymerization is conducted to produce emulsion polymer of an average particle size not exceeding 4 microns in diameter, having embeded therein the still smaller organic color pigment particles.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 25 OF 41 USPATOLD on STN
ACCESSION NUMBER: 1968:29306 USPATOLD
TITLE: Method of making a crosslinked polymer foam and product obtained therefrom
INVENTOR(S): VERDOL JOSEPH A

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 3390105 | A | 19680625 |
| APPLICATION INFO.: | US 1963-310492 | | 19630920 |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1963-310492 | 19630920 |
| | US 1963-310474 | 19630920 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: TILLMAN, MURRAY
LINE COUNT: 1302
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 26 OF 41 USPATOLD on STN
ACCESSION NUMBER: 1966:62104 USPATOLD
TITLE: Alkoxyalkyl esters of carboxylic acids
INVENTOR(S): VERDOL JOSEPH A

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 3288842 | A | 19661129 |
| APPLICATION INFO.: | US 1962-177747 | | 19620306 |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1962-177747 | 19620306 |
| | US 1962-177749 | 19620306 |
| | US 1962-202963 | 19620618 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: WEINBERGER, LORRAINE A
LINE COUNT: 523

L6 ANSWER 27 OF 41 USPATOLD on STN
ACCESSION NUMBER: 1966:30734 USPATOLD
TITLE: Alcohols by selective hydrolysis of olefins
INVENTOR(S): KOVACH STEPHEN M

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 3257469 | A | 19660621 |
| APPLICATION INFO.: | US 1962-184509 | | 19620402 |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1962-184509 | 19620402 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: ZITVER, LEON
LINE COUNT: 167
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 28 OF 41 USPATOLD on STN
ACCESSION NUMBER: 1957:10310 USPATOLD
TITLE: Electrochemical systems
INVENTOR(S): PRESTON ROBINSON

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2786088 | A | 19570319 |
| APPLICATION INFO.: | US 1952-308620 | | 19520909 |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1952-308620 | 19520909 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
LINE COUNT: 298
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 29 OF 41 USPAT2 on STN
ACCESSION NUMBER: 2004:281058 USPAT2
TITLE: Multiple catalyst and reactor system for olefin polymerization and polymers produced therefrom
INVENTOR(S): Abhari, Ramin, Bixby, OK, UNITED STATES
Sims, Charles Lewis, Houston, TX, UNITED STATES
Jiang, Peijun, League City, TX, UNITED STATES
Johnsrud, David Raymond, Humble, TX, UNITED STATES
Canich, Jo Ann Marie, Houston, TX, UNITED STATES
PATENT ASSIGNEE(S): ExxonMobil Chemical Patents Inc., Houston, TX, UNITED STATES (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 7223822 | B2 | 20070529 |
| APPLICATION INFO.: | US 2004-825380 | | 20040415 (10) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2003-687508, filed on 15 Oct 2003, PENDING Continuation-in-part of Ser. No. US 2003-686951, filed on 15 Oct 2003, PENDING

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2003-460714P | 20030404 (60) |
| | US 2002-418482P | 20021015 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Lu, Caixia
NUMBER OF CLAIMS: 56
EXEMPLARY CLAIM: 1
LINE COUNT: 9310
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is a process for producing branched polymers including at least 50 mol % C.sub.3-C.sub.40 olefins. The process may include: (1) feeding a first catalyst, an activator, and one or more C.sub.2-C.sub.40 olefins into a first reaction zone at a temperature of greater than 70° C. and a residence time of 120 minutes or less to produce a product; (2) feeding the product a second catalyst, and an activator into a second reaction zone at a temperature of greater than 70° C., and a residence time of 120 minutes or less. One of the catalysts should be chosen to produce a polymer having a weight average molecular weight of 100,000 or less and a crystallinity of 20% or less. The other catalyst should be chosen to producing a polymer having a weight average molecular weight of 100,000 or less and a crystallinity of 20% or more.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 30 OF 41 USPAT2 on STN
ACCESSION NUMBER: 2004:190907 USPAT2
TITLE: Cross-copolymerized olefin/aromatic vinyl compound/diene copolymer and process for its production
INVENTOR(S): Arai, Toru, Machida, JAPAN
Otsu, Toshiaki, Machida, JAPAN
Nakajima, Masataka, Machida, JAPAN
PATENT ASSIGNEE(S): Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6878779 | B2 | 20050412 |
| APPLICATION INFO.: | US 2004-759084 | | 20040120 (10) |

RELATED APPLN. INFO.: Division of Ser. No. US 2002-78668, filed on 21 Feb 2002, Pat. No. US 6803422 Continuation-in-part of Ser. No. US 831358, Pat. No. US 6566453 A 371 of International Ser. No. WO 2000-JP6284, filed on 13 Sep 2000

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1999-258618 | 19990913 |
| | JP 2000-184053 | 20000620 |
| | JP 2001-44715 | 20010221 |
| | JP 2001-221247 | 20010723 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Seidleck, James J.
ASSISTANT EXAMINER: Asinovsky, Olga
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 4
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 12 Drawing Figure(s); 10 Drawing Page(s)
LINE COUNT: 2502
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A highly uniform vinyl compound polymer-cross-copolymerized olefin/styrene/diene copolymer excellent in processability, mechanical properties, high temperature properties, compatibility and transparency, and its composition and a process for its production, are provided. This copolymer is a crossed polymer obtained by cross-copolymerizing an olefin/styrene/diene copolymer having a styrene content of from 0.03 mol % to 96 mol %, a diene content of from 0.0001 mol % to 3 mol % and the rest being an olefin, with an olefin/aromatic vinyl compound copolymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 31 OF 41 USPAT2 on STN
ACCESSION NUMBER: 2003:174274 USPAT2
TITLE: Process for the preparation of tertiary alcohols by the hydration of tertiary olefins in a reactive rectification using a structured multi-purpose packing
INVENTOR(S): Gohrt, Axel, Cologne, GERMANY, FEDERAL REPUBLIC OF
Grub, Joachim, Dormagen, GERMANY, FEDERAL REPUBLIC OF
Kaminsky, Stefan, Dormagen, GERMANY, FEDERAL REPUBLIC OF
Muller, Stephan, Pulheim, GERMANY, FEDERAL REPUBLIC OF
Schwegler, Brian, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
PATENT ASSIGNEE(S): EC Erdolchemie GmbH, Cologne, GERMANY, FEDERAL REPUBLIC OF (non-U.S. corporation)
Bayer AG, Leverkusen, GERMANY, FEDERAL REPUBLIC OF (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6951967 | B2 | 20051004 |
| APPLICATION INFO.: | US 2003-365497 | | 20030213 (10) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 2001-974059, filed on 11 Oct 2001, ABANDONED

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | DE 2000-10050627 | 20001012 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Price, Elvis O.
LEGAL REPRESENTATIVE: Finnegan, Henderson, Farabow, Garrett and Dunner, L.L.P.
NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 476
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Tertiary alcohols can be prepared by the hydration of tertiary olefins having the same number of carbon atoms on an acidic ion exchanger using special structured multi-purpose packings for heterogeneous reactive rectification. An excellent yield and purity of the alcohol and an extended service life of the catalyst are achieved.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 32 OF 41 USPAT2 on STN
ACCESSION NUMBER: 2003:126996 USPAT2
TITLE: Crease resistant imaging element with coated paper base
INVENTOR(S): Bourdelais, Robert P., Pittsford, NY, United States
Aylward, Peter T., Hilton, NY, United States
Mruk, Geoffrey, Rochester, NY, United States
PATENT ASSIGNEE(S): Eastman Kodak Company, Rochester, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 6589720 | B2 | 20030708 | |
| APPLICATION INFO.: | US 2001-45712 | | 20011029 | (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Schilling, Richard L.
LEGAL REPRESENTATIVE: Leipold, Paul A.
NUMBER OF CLAIMS: 37
EXEMPLARY CLAIM: 24
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 2342
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to an imaging element comprising a coated coated paper base, a lower biaxially oriented sheet, and an upper biaxially oriented sheet.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 33 OF 41 USPAT2 on STN
ACCESSION NUMBER: 2003:100273 USPAT2
TITLE: Preparation of polyindanebisphenols and polymers derived therefrom
INVENTOR(S): McCarthy, Thomas F., Bonnington, VT, United States
Schwind, David, Randolph, NJ, United States
Smith, Gordon, Arlington Hts, IL, United States
PATENT ASSIGNEE(S): Honeywell International Inc., Morristown, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 6858304 | B2 | 20050222 | |
| APPLICATION INFO.: | US 2002-163834 | | 20020605 | (10) |

RELATED APPLN. INFO.: Division of Ser. No. US 2000-656430, filed on 6 Sep 2000, now patented, Pat. No. US 6509063 Division of Ser. No. US 1998-31286, filed on 26 Feb 1998, now patented, Pat. No. US 6153721
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Dawson, Robert
ASSISTANT EXAMINER: Zimmer, Marc S
LEGAL REPRESENTATIVE: Thompson, Sandra P., Bingham McCutchen LLP
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1,12
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 1048
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel polyindanebisphenols or PIBPs for the preparation of new and improved thermosetting polymers having the general formula of ##STR1##

are provided. Also disclosed are thermoplastic or thermoset compositions prepared using the novel compounds of the invention, as well as methods of making and using the same. When copolymerized or reactive with other commercial resins such as, e.g., epoxy compounds, PIBP based polymers are characterized by high glass transition temperature ("Tg"), low dielectric constant, low moisture absorption, low coefficient of expansion, low cost, and can be processed on equipment typically used for the production of epoxy based laminates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 34 OF 41 USPAT2 on STN
ACCESSION NUMBER: 2002:288259 USPAT2
TITLE: Cross-copolymerized olefin/aromatic vinyl compound/diene copolymer and process for its production
INVENTOR(S): Arai, Toru, Machida, JAPAN
Otsu, Toshiaki, Machida, JAPAN
Nakajima, Masataka, Machida, JAPAN
PATENT ASSIGNEE(S): Denki Kagaku Kogyo Kabushiki Kaisha, Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6803422 | B2 | 20041012 |
| APPLICATION INFO.: | US 2002-78668 | | 20020221 (10) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 831358, now patented, Pat. No. US 6566453

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 1999-258618 | 19990913 |
| | JP 2000-184053 | 20000620 |
| | JP 2001-47715 | 20010221 |
| | JP 2001-221247 | 20010723 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Seidleck, James J.
ASSISTANT EXAMINER: Asinovsky, Olga
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 10 Drawing Page(s)
LINE COUNT: 2494

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A highly uniform vinyl compound polymer-cross-copolymerized olefin/styrene/diene copolymer excellent in processability, mechanical properties, high temperature properties, compatibility and transparency, and its composition and a process for its production, are provided. This copolymer is a crossed polymer obtained by cross-copolymerizing an olefin/styrene/diene copolymer having a styrene content of from 0.03 mol % to 96 mol %, a diene content of from 0.0001 mol % to 3 mol % and the rest being an olefin, with an olefin/aromatic vinyl compound copolymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 35 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:731764 CAPLUS
DOCUMENT NUMBER: 143:173951
TITLE: Manufacture of soluble multifunctional vinyl aromatic polymers with controlled molecular weight distribution
INVENTOR(S): Kawabe, Masanao
PATENT ASSIGNEE(S): Nippon Steel Chemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2005213443 | A | 20050811 | JP 2004-24154 | 20040130 |
| WO 2005073258 | A1 | 20050811 | WO 2005-JP1000 | 20050126 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 2007155923 | A1 | 20070705 | US 2006-586969 | 20060725 |
| PRIORITY APPLN. INFO.: | | | JP 2004-24154 A | 20040130 |
| | | | WO 2005-JP1000 W | 20050126 |

OTHER SOURCE(S): MARPAT 143:173951

AB The polymers are manufactured by cationic polymerization of monomers containing 20-100 mol% divinyl aromatic compds. by using Lewis acids and (ZCR12)pR2 (R1 = H, C1-6 hydrocarbyl; R2 = p-valent aromatic hydrocarbon, aliphatic hydrocarbon; Z = halo, C1-6 alkoxy, acyloxy; p = 1-6) as initiators at 20-120° in the presence of quaternary ammonium salts. Thus, 0.0481 mol divinylbenzene and 0.0362 mol ethylvinylbenzene were polymerized at 70° for 1 h in dichloroethane in the presence of 1-chloroethylbenzene, tetrabutylammonium chloride, and SnCl4 to give 61.4% copolymer with Mw 7670, Mn 3680, having 7.5 mol% indane structure, Tg 291°, softening point ≥300°, thermal decomposition temperature 417°, and good solubility in PhMe, xylene, THF, dichloroethane, dichloromethane, and CHCl3.

L6 ANSWER 36 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:180085 CAPLUS
DOCUMENT NUMBER: 140:218652
TITLE: Indene polymers with high heat resistance, less water absorption, and low birefringence index, concise manufacture thereof, and moldings and optical materials therefrom
INVENTOR(S): Yamanaka, Tetsuro; Yamashita, Yukihiko; Suzuki, Minoru
PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2004067888 | A | 20040304 | JP 2002-229827 | 20020807 |
| PRIORITY APPLN. INFO.: | | | JP 2002-229827 | 20020807 |

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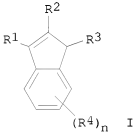


I

AB Indene polymers, useful for optical disks, lenses, etc., are manufactured by (i) copolymn. of 100 parts (a1) monomers containing I (R1-R4 = substituents containing H, halo, C, O, N, P, and/or Si atom; n = 1-4) and 0.01-5 parts (a2) cationically polymerizable polyfunctional monomers, (ii) copolymn. of 100 parts (b1) styrene (derivs.) and 0.01-0.1 part (b2) polyfunctional monomers, and (iii) mixing a1-a2 copolymers and b1-b2 copolymers in (20-80):(20-80) (%). Thus, a 50:50 mixture of 0.1:50:50 divinylbenzene-indene-4-methylstyrene copolymer and 0.002:100 divinylbenzene-styrene copolymer manufactured as above was press molded to give a specimen showing Tg 129°, water absorption 0.13%, and birefringence index 10.6 nm.

L6 ANSWER 37 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:159413 CAPLUS
DOCUMENT NUMBER: 140:207233
TITLE: Manufacture of indene-based polymer, the polymer, molding of the polymer, and optical instrument part made of the polymer
INVENTOR(S): Yamanaka, Tetsuro; Yamashita, Yukihiko; Suzuki, Minoru
PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2004059732 | A | 20040226 | JP 2002-219882 | 20020729 |
| PRIORITY APPLN. INFO.: | | | JP 2002-219882 | 20020729 |

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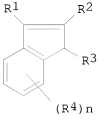


I

AB The polymer is manufactured by polymerization of monomers containing an indene I (R1-R4 = group made of H, halogen, C, O, N, P, and/or Si; n = 1-4) and 0.01-5% (based on the monomers) of a cationically polymerizable polyfunctional monomer in an organic solvent. The molding, preferably a film, is that made of the polymer, e.g., indene-styrene-divinylbenzene copolymer. The optical instrument part, e.g., a lens, a disk, etc., is that using the molding showing good optical properties, mech. strength, and low water absorption.

L6 ANSWER 38 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:451815 CAPLUS
DOCUMENT NUMBER: 122:190559
TITLE: Photocurable compositions of polyindane and 1,3-diisopropenylbenzene, and coating process
INVENTOR(S): Crivello, James V.
PATENT ASSIGNEE(S): Rensselaer Polytechnic Institute, USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 5350604 | A | 19940927 | US 1992-988218 | 19921209 |
| PRIORITY APPLN. INFO.: | | | US 1992-988218 | 19921209 |

AB Photocurable compns. containing 10-25 parts poly(m-indane) [prepared by cationic photopolymn. of 1,3-diisopropenylbenzene (I)], 75-150 parts I, and 0.05-5 mol% (based on I) cationic photopolymn. initiator give thermally stable coatings with low dielec. constant, useful for Si wafers.

L6 ANSWER 39 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:148097 CAPLUS
DOCUMENT NUMBER: 118:148097
TITLE: Polymers with indane units by cationic polymerization
AUTHOR(S): Nuyken, Oskar; Maier, Gerhard; Yang, Dazhong; Leitner, Michael B.
CORPORATE SOURCE: Dep. Macromol. Chem., Univ. Bayreuth, Bayreuth, W-8580, Germany
SOURCE: Makromolekulare Chemie, Macromolecular Symposia (1992), 60(Int. Symp. Cationic Polym. Relat. Ionic Processes, 10th, 1991), 57-63
CODEN: MCMSES; ISSN: 0258-0322
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In spite of the difunctionality of the monomers, cationic polymerization of 1,3- and 1,4-diisopropenylbenzene (I) does not lead to branched or crosslinked products. Instead, soluble polymers are obtained, containing the 1,1,3-trimethylindan system as repetitive unit along the backbone. These polymers are interesting materials because of their high glass transition temperature (200-250°) and good thermal stability in air (2% weight loss at 450°). Although the mol. weight of the polyindans seems to be limited due to a side reaction, it is possible to produce telechelic polyindans. Substitution of an alkyl side chain onto the isopropenyl groups of I leads to monomers which yield substituted polyindans with glass transition temps. ≥26°. Such polymers still exhibit good thermal stability: at 340° a weight loss of only 2% occurs. I can even be anionically polymerized to linear polymers. In this case, the resulting polymer possesses isopropenyl Ph side groups, which can be used as initiators for cationic polymn . of isobutene to obtain grafted copolymers.

L6 ANSWER 40 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:103340 CAPLUS
DOCUMENT NUMBER: 118:103340
TITLE: Photoinitiated cationic polymerization of 1,3-diisopropenylbenzene: a novel spin-on polymeric dielectric
AUTHOR(S): Suh, D. H.; Crivello, J. V.
CORPORATE SOURCE: Dep. Chem., Rensselaer Polytech. Inst., Troy, NY, 12180, USA
SOURCE: Chemistry of Materials (1993), 5(2), 210-13
CODEN: CMATEX; ISSN: 0897-4756
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The cationic photopolymn. of 1,3-diisopropenylbenzene proceeds rapidly under UV irradiation catalyzed by diaryliodonium salt photoinitiators to give hard, transparent films. The polymerization proceeds mainly by a condensation followed by intramol. ring-closure process to yield indane structures along the polymer backbone. The inclusion of a small amount of linear polyindane as a film-forming agent along with the monomer gives solns. which can be spin coated onto Si wafers. Measurements made on the photopolymd. potting compns. give a dielec. constant of 2.6. These coatings also display excellent thermal stability and a low coefficient of thermal expansion.

L6 ANSWER 41 OF 41 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:595489 CAPLUS
DOCUMENT NUMBER: 111:195489
TITLE: Cationic polymerization of bis(1-alkylvinyl)benzenes and related monomers. 2.

Controlled syntheses of 1,1,3-trimethyl substituted polyindanes
AUTHOR(S): Dittmer, Thomas; Gruber, Freddy; Nuyken, Oskar
CORPORATE SOURCE: Tech. Univ. Muenchen, Garching, D-8046, Fed. Rep. Ger.
SOURCE: Makromolekulare Chemie (1989), 190(8), 1771-90
CODEN: MACEAK; ISSN: 0025-116X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 1,1,3-Trimethyl-substituted polyindanes were synthesized in the presence of Bronsted acids (H2SO4, CF3COOH) or Lewis acids (BC13, AlC13) using 1,4-diisopropylbenzene, 1,4-bis(1-hydroxy-1-methylethyl)benzene or 1,4-bis(1-chloro-1-methylethyl)benzene as monomers. The effects of exptl. conditions on yields, mol. wts. and polymer structure were studied in detail with respect to monomer and initiator used, their concns., reaction time, and exptl. procedure. Polymerization temps. above the ceiling temperature and low monomer concns. favored the formation of indane units. DSC measurements on the polymers proved the remarkable heat-resistance of polyindanes (Tdec ≥ 450°, Tg ≈ 210°).

=> FIL STNGUIDE

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 185.47 | 185.89 |

| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| CA SUBSCRIBER PRICE | -5.60 | -5.60 |

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| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 1.14 | 187.03 |

| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| CA SUBSCRIBER PRICE | 0.00 | -5.60 |

FILE 'USPATFULL' ENTERED AT 14:59:27 ON 29 FEB 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPATOLD' ENTERED AT 14:59:27 ON 29 FEB 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 14:59:27 ON 29 FEB 2008
CA INDEXING COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'CAPLUS' ENTERED AT 14:59:27 ON 29 FEB 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE 'JAPIO' ENTERED AT 14:59:27 ON 29 FEB 2008
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=> d his

     (FILE 'HOME' ENTERED AT 14:33:46 ON 29 FEB 2008)
               SET ABBR ON PERM
               SET PLURALS ON PERM

     FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:34:41 ON
     29 FEB 2008
L1         35313 S (POLY? OR COPOLY?)(1A)(DIVINYL BENZENE# OR DIVINYLBENZENE# OR
L2         32448 S (POLY? OR COPOLY?)(S)(INDAN### OR INDEN###)
L3          1068 S L1 AND L2
L4           922 S (DIVINYL BENZENE# OR DIVINYLBENZENE# OR DIVINYL NAPHTHALENE#
L5           201 S L3 AND L4
L6            41 S L5 AND CATION?(4A)(POLY? OR INITIAT? OR CATALY?)

     FILE 'STNGUIDE' ENTERED AT 14:47:49 ON 29 FEB 2008

     FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:59:27 ON
     29 FEB 2008

=> s (cation?(3a)(poly? or copoly? or initiat? or cataly?))(s)(divinyl benzene# or
divinylbenzene# or divinyl naphthalene# or divinylnaphthalene# or di(1w)isopropenyl
benzene or diisopropenylbenzene)
L7         2547 (CATION?(3A)(POLY? OR COPOLY? OR INITIAT? OR CATALY?))(S)(DIVINY
                L BENZENE# OR DIVINYLBENZENE# OR DIVINYL NAPHTHALENE# OR DIVINYL
                NAPHTHALENE# OR DI(1W) ISOPROPENYL BENZENE OR DIISOPROPENYLBENZE
                NE)

=> s (cation?(3a)(poly? or copoly? or initiat? or cataly?))(s)(dielectric constant)
L8          164 (CATION?(3A)(POLY? OR COPOLY? OR INITIAT? OR CATALY?))(S)(DIELEC
                TRIC CONSTANT)

=> s l7 and l8
L9            4 L7 AND L8

=> d l9 1-4 ibib abs

L9   ANSWER 1 OF 4  USPATFULL on STN
ACCESSION NUMBER:       2007:178102  USPATFULL
TITLE:                  Soluble polyfunctional vinyl aromatic polymer and
                        method of producing the same
INVENTOR(S):            Kawabe, Masanao, Fukuoka, JAPAN
PATENT ASSIGNEE(S):     NIPPON STEEL CHEMICAL CO., LTD., Tokyo, JAPAN (non-U.S.
                        corporation)

                             NUMBER       KIND    DATE
                        ---------------- ------ --------
PATENT INFORMATION:     US 2007155923      A1   20070705
APPLICATION INFO.:      US 2005-586969     A1   20050126  (10)
                        WO 2005-JP1000           20050126
                                                 20060725  PCT 371 date

                              NUMBER         DATE
                        -------------------- --------
PRIORITY INFORMATION:   JP 2004-24154        20040130
DOCUMENT TYPE:          Utility
FILE SEGMENT:           APPLICATION
```

LEGAL REPRESENTATIVE: ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP, 1725 K STREET, NW, SUITE 1000, WASHINGTON, DC, 20006, US
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
LINE COUNT: 1453
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to a soluble polyfunctional vinylaromatic copolymer improved in heat resistance, resistance to thermal decomposition, solvent solubility, and processability. The soluble polyfunctional vinylaromatic polymer is obtained by cationically polymerizing, at a temperature of 20 to 120° C., one or more monomer ingredients including 20 to 100 mol % divinylaromatic compound (a) in the presence of a donor ingredient, e.g., a quaternary ammonium salt, with the aid of a Lewis acid catalyst and an initiator represented by the following general formula (1) ##STR1## wherein R.sup.1 represents hydrogen or a monovalent C.sub.1-6 hydrocarbon group; R.sup.2 represents an aromatic or aliphatic hydrocarbon group having a valence of p; Z represents halogen or C.sub.1-6 alkoxy or acyloxy; and p is an integer of 1 to 6; provided that when two or more R.sup.1's and Z's are present per molecule, they may be identical to different from each other.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 2 OF 4 USPATFULL on STN
ACCESSION NUMBER: 94:84111 USPATFULL
TITLE: Photocurable compositions of polyindane and 1,3-diisopropenylbenzene, and coating process
INVENTOR(S): Crivello, James V., Clifton Park, NY, United States
PATENT ASSIGNEE(S): Rensselaer Polytechnic Institute, Troy, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5350604 | | 19940927 |
| APPLICATION INFO.: | US 1992-988218 | | 19921209 (7) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: McCamish, Marion E.
ASSISTANT EXAMINER: Koeckert, Arthur H.
LEGAL REPRESENTATIVE: Heslin & Rothenberg
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1,5
LINE COUNT: 416
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for cationically polymerizing 1,3-diisopropenylbenzene to produce a polymer which is predominantly a polyindane is disclosed. The resulting polyindanes are novel compounds useful as low dielectric constant coatings. Compositions containing 1,3-diisopropenylbenzene and cationic photoinitiators, and optionally containing a polyindane useful for preparing coatings, are disclosed as are processes for coating substrates using the compositions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:451815 CAPLUS
DOCUMENT NUMBER: 122:190559
TITLE: Photocurable compositions of polyindane and

1,3-diisopropenylbenzene, and coating process
INVENTOR(S): Crivello, James V.
PATENT ASSIGNEE(S): Rensselaer Polytechnic Institute, USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 5350604 | A | 19940927 | US 1992-988218 | 19921209 |

PRIORITY APPLN. INFO.: US 1992-988218 19921209
AB Photocurable compns. containing 10-25 parts poly(m-indane) [prepared by cationic photopolymn. of 1,3-diisopropenylbenzene (I)], 75-150 parts I, and 0.05-5 mol% (based on I) cationic photopolymn. initiator give thermally stable coatings with low dielec. constant, useful for Si wafers.

L9 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:103340 CAPLUS
DOCUMENT NUMBER: 118:103340
TITLE: Photoinitiated cationic polymerization of 1,3-diisopropenylbenzene: a novel spin-on polymeric dielectric
AUTHOR(S): Suh, D. H.; Crivello, J. V.
CORPORATE SOURCE: Dep. Chem., Rensselaer Polytech. Inst., Troy, NY, 12180, USA
SOURCE: Chemistry of Materials (1993), 5(2), 210-13
CODEN: CMATEX; ISSN: 0897-4756
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The cationic photopolymn. of 1,3-diisopropenylbenzene proceeds rapidly under UV irradiation catalyzed by diaryliodonium salt photoinitiators to give hard, transparent films. The polymerization proceeds mainly by a condensation followed by intramol. ring-closure process to yield indane structures along the polymer backbone. The inclusion of a small amount of linear polyindane as a film-forming agent along with the monomer gives solns. which can be spin coated onto Si wafers. Measurements made on the photopolymd. potting compns. give a dielec. constant of 2.6. These coatings also display excellent thermal stability and a low coefficient of thermal expansion.

=> d his

(FILE 'HOME' ENTERED AT 14:33:46 ON 29 FEB 2008)
SET ABBR ON PERM
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FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:34:41 ON 29 FEB 2008
L1 35313 S (POLY? OR COPOLY?)(1A)(DIVINYL BENZENE# OR DIVINYLBENZENE# OR
L2 32448 S (POLY? OR COPOLY?)(S)(INDAN### OR INDEN###)
L3 1068 S L1 AND L2
L4 922 S (DIVINYL BENZENE# OR DIVINYLBENZENE# OR DIVINYL NAPHTHALENE#
L5 201 S L3 AND L4

```
L6           41 S L5 AND CATION?(4A)(POLY? OR INITIAT? OR CATALY?)

     FILE 'STNGUIDE' ENTERED AT 14:47:49 ON 29 FEB 2008

     FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:59:27 ON
     29 FEB 2008
L7         2547 S (CATION?(3A)(POLY? OR COPOLY? OR INITIAT? OR CATALY?))(S)(DIV
L8          164 S (CATION?(3A)(POLY? OR COPOLY? OR INITIAT? OR CATALY?))(S)(DIE
L9            4 S L7 AND L8

=> s (solvent# or medium or media or diluent#)(6a)(dielectric constant)
L10      19010 (SOLVENT# OR MEDIUM OR MEDIA OR DILUENT#)(6A)(DIELECTRIC CONSTAN
               T)

=> s l7 and l10
L11         17 L7 AND L10

=> d l11 1-17 ibib abs

L11  ANSWER 1 OF 17  USPATFULL on STN
ACCESSION NUMBER:       2007:178102  USPATFULL
TITLE:                  Soluble polyfunctional vinyl aromatic polymer and
                        method of producing the same
INVENTOR(S):            Kawabe, Masanao, Fukuoka, JAPAN
PATENT ASSIGNEE(S):     NIPPON STEEL CHEMICAL CO., LTD., Tokyo, JAPAN (non-U.S.
                        corporation)

                             NUMBER       KIND    DATE
                        ---------------- ------ --------
PATENT INFORMATION:     US 2007155923      A1   20070705
APPLICATION INFO.:      US 2005-586969     A1   20050126  (10)
                        WO 2005-JP1000           20050126
                                                 20060725  PCT 371 date

                              NUMBER         DATE
                        ------------------ --------
PRIORITY INFORMATION:   JP 2004-24154      20040130
DOCUMENT TYPE:          Utility
FILE SEGMENT:           APPLICATION
LEGAL REPRESENTATIVE:   ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP, 1725 K
                        STREET, NW, SUITE 1000, WASHINGTON, DC, 20006, US
NUMBER OF CLAIMS:       15
EXEMPLARY CLAIM:        1
LINE COUNT:             1453
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB      The present invention relates to a soluble polyfunctional vinylaromatic
        copolymer improved in heat resistance, resistance to thermal
        decomposition, solvent solubility, and processability. The soluble
        polyfunctional vinylaromatic polymer is obtained by cationically
        polymerizing, at a temperature of 20 to 120° C., one or more
        monomer ingredients including 20 to 100 mol % divinylaromatic compound
        (a) in the presence of a donor ingredient, e.g., a quaternary ammonium
        salt, with the aid of a Lewis acid catalyst and an initiator represented
        by the following general formula (1)     ##STR1##   wherein R.sup.1
        represents hydrogen or a monovalent C.sub.1-6 hydrocarbon group; R.sup.2
        represents an aromatic or aliphatic hydrocarbon group having a valence
        of p; Z represents halogen or C.sub.1-6 alkoxy or acyloxy; and p is an
        integer of 1 to 6; provided that when two or more R.sup.1's and Z's are
        present per molecule, they may be identical to different from each
        other.
```

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 2 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2006:3754 USPATFULL
TITLE: Non-humidified polymer electrolyte
INVENTOR(S): Sun, Hee-young, Yongin-si, KOREA, REPUBLIC OF
Kim, Ho-sung, Suwon-si, KOREA, REPUBLIC OF
Cho, Myung-dong, Hwaseong-si, KOREA, REPUBLIC OF

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2006003211 | A1 | 20060105 |
| APPLICATION INFO.: | US 2005-155563 | A1 | 20050620 (11) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | KR 2004-51798 | 20040703 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MCGUIREWOODS, LLP, 1750 TYSONS BLVD, SUITE 1800, MCLEAN, VA, 22102, US
NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 742
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a novel non-humidified polymer electrolyte and a fuel cell including the same. The non-humidified polymer electrolyte comprises an ion medium comprising an organic compound that has a boiling point greater than 100° C. and a dielectric constant greater than 3. The non-humidified polymer electrolyte further comprises a matrix comprising an ion conducting polymer, wherein the ion medium is impregnated into the matrix.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 3 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2003:127990 USPATFULL
TITLE: Electrotransport delivery of leuprolide
INVENTOR(S): Chandrasekaran, Santosh Kumar, Moraga, CA, UNITED STATES
Watanable, Tyler, Los Altos, CA, UNITED STATES
Prather, Richard D., Palo Alto, CA, UNITED STATES
Theeuwes, Felix, Los Altos Hills, CA, UNITED STATES
Gyory, J. Richard, San Jose, CA, UNITED STATES
Haak, Ronald P., Menlo Park, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2003088205 | A1 | 20030508 |
| APPLICATION INFO.: | US 2002-213511 | A1 | 20020806 (10) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1994-302143, filed on 7 Sep 1994, ABANDONED
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ALZA CORPORATION, P O BOX 7210, INTELLECTUAL PROPERTY DEPARTMENT, MOUNTAIN VIEW, CA, 940397210
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 921
AB A membrane capable of inhibiting agent release from a delivery system when no electrical current is flowing and yet provide minimal impedance to electrically-assisted agent delivery, useful both for incorporating into electrotransport agent delivery systems and for use in measuring agent release rates in in vitro testing.

L11 ANSWER 4 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2001:119344 USPATFULL
TITLE: Styrene sulfonate cation exchange membrane
INVENTOR(S): Lin, Juchui Ray, Bedford, MA, United States
Mir, Leon, Newton, MA, United States
Zheng, Yongchang, Watertown, MA, United States

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2001009967 | A1 | 20010726 |
| | US 6344584 | B2 | 20020205 |
| APPLICATION INFO.: | US 2001-785846 | A1 | 20010216 (9) |

RELATED APPLN. INFO.: Division of Ser. No. US 1998-46292, filed on 23 Mar 1998, GRANTED, Pat. No. US 6221248
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: McDermott Will & Emery, 28 State street, Boston, MA, 02109
NUMBER OF CLAIMS: 45
EXEMPLARY CLAIM: 1
LINE COUNT: 696
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel styrene sulfonate-based polymers and cation exchange membranes which are particularly suitable for use in electrodialysis of whey and improved methods for electrodialysis of whey are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 5 OF 17 USPATFULL on STN
ACCESSION NUMBER: 2001:59274 USPATFULL
TITLE: Styrene sulfonate cation exchange membrane
INVENTOR(S): Lin, Juchui Ray, Bedford, MA, United States
Mir, Leon, Newton, MA, United States
Zheng, Yongchang, Watertown, MA, United States
PATENT ASSIGNEE(S): Ionics Incorporated, Watertown, MA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6221248 | B1 | 20010424 |
| APPLICATION INFO.: | US 1998-46292 | | 19980323 (9) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Henderson, Christopher
LEGAL REPRESENTATIVE: McDermott, Will & Emery
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
LINE COUNT: 491
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel styrene sulfonate-based polymers and cation exchange membranes which are particularly suitable for use in electrodialysis of whey and

improved methods for electrodialysis of whey are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 6 OF 17 USPATFULL on STN
ACCESSION NUMBER: 94:53103 USPATFULL
TITLE: Membrane for electrotransport transdermal drug delivery
INVENTOR(S): Theeuwes, Felix, Los Altos, CA, United States
Gyory, J. Richard, Los Altos, CA, United States
Haak, Ronald P., Cupertino, CA, United States
PATENT ASSIGNEE(S): Alza Corporation, Palo Alto, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5322502 | | 19940621 |
| APPLICATION INFO.: | US 1993-3761 | | 19930113 (8) |

DISCLAIMER DATE: 20091208
RELATED APPLN. INFO.: Continuation of Ser. No. US 1992-898618, filed on 15 Jun 1992, now patented, Pat. No. US 5232438 which is a continuation of Ser. No. US 1991-648269, filed on 30 Jan 1991, now patented, Pat. No. US 5169382 which is a continuation of Ser. No. US 1988-252402, filed on 3 Oct 1988, now patented, Pat. No. US 5080646
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Rosenbaum, C. Fred
ASSISTANT EXAMINER: Rafa, Michael
LEGAL REPRESENTATIVE: Miller, D. Byron, Stone, Steven F., Mandell, Edward L.
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 918
AB A membrane capable of inhibiting agent release from a delivery system when no electrical current is flowing and yet provide minimal impedance to electrically-assisted agent delivery, useful both for incorporating into electrotransport agent delivery systems and for use in measuring agent release rates in in vitro testing.

L11 ANSWER 7 OF 17 USPATFULL on STN
ACCESSION NUMBER: 93:62689 USPATFULL
TITLE: Membrane for electrotransport transdermal drug delivery
INVENTOR(S): Theeuwes, Felix, Los Altos, CA, United States
Gyory, J. Richard, Los Altos, CA, United States
Haak, Ronald P., Cupertino, CA, United States
PATENT ASSIGNEE(S): Alza Corporation, Palo Alto, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5232438 | | 19930803 |
| APPLICATION INFO.: | US 1992-898618 | | 19920615 (7) |

DISCLAIMER DATE: 20070522
RELATED APPLN. INFO.: Continuation of Ser. No. US 1991-648269, filed on 30 Jan 1991, now patented, Pat. No. US 5169382 which is a continuation of Ser. No. US 1988-252402, filed on 3 Oct 1988, now patented, Pat. No. US 5080646
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted

PRIMARY EXAMINER: Rosenbaum, C. Fred
ASSISTANT EXAMINER: Rafa, Michael
LEGAL REPRESENTATIVE: Miller, D. Byron, Stone, Steven F., Mandell, Edward L.
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 930
AB A membrane capable of inhibiting agent release from a delivery system when no electrical current is flowing and yet provide minimal impedance to electrically-assisted agent delivery, useful both for incorporating into electrotransport agent delivery systems and for use in measuring agent release rates in in vitro testing.

L11 ANSWER 8 OF 17 USPATFULL on STN
ACCESSION NUMBER: 93:31052 USPATFULL
TITLE: Cation exchange membranes
INVENTOR(S): MacDonald, Russell J., Watertown, MA, United States
PATENT ASSIGNEE(S): Ionics, Incorporated, Watertown, MA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5203982 | | 19930420 |
| APPLICATION INFO.: | US 1992-821675 | | 19920116 (7) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1991-639852, filed on 1 Nov 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-422212, filed on 16 Oct 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Page, Thurman K.
ASSISTANT EXAMINER: Kulkosky, Peter F.
LEGAL REPRESENTATIVE: Saliba, Norman E.
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
LINE COUNT: 648
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention is directed to highly crosslinked, substantially water insoluble, cation exchange membranes prepared from homogeneous solutions comprising at least one substantially water soluble polar solvent (including water) at least one substantially water soluble polymerizable monomeric onium styrene sulfonate McKee type salt and/or substantially water soluble monomeric, polymerizable derivative thereof and at least one substantially water insoluble, di-, tri- or poly-ethylenic (vinyl or related) crosslinking monomer copolymerizable with said sulfonate salt. Membranes, especially useful in electrodialysis, may be obtained in "one-step" processes which require no further chemical reactions after polymerization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 9 OF 17 USPATFULL on STN
ACCESSION NUMBER: 92:100541 USPATFULL
TITLE: Membrane for electrotransport transdermal drug delivery
INVENTOR(S): Theeuwes, Felix, Los Altos, CA, United States
Gyory, J. Richard, Los Altos, CA, United States
Haak, Ronald P., Cupertino, CA, United States
PATENT ASSIGNEE(S): Alza Corporation, Palo Alto, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5169382 | | 19921208 |
| APPLICATION INFO.: | US 1991-648269 | | 19910130 (7) |

DISCLAIMER DATE: 20070522
RELATED APPLN. INFO.: Continuation of Ser. No. US 1988-252402, filed on 3 Oct 1988
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Pellegrino, Stephen C.
ASSISTANT EXAMINER: Rafa, Michael
LEGAL REPRESENTATIVE: Miller, D. Byron, Mandell, Edward L., Stone, Steven F.
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 908
AB A membrane capable of inhibiting agent release from a delivery system when no electrical current is flowing and yet provide minimal impedance to electrically-assisted agent delivery, useful both for incorporating into electrotransport agent delivery systems and for use in measuring agent release rates in in vitro testing.

L11 ANSWER 10 OF 17 USPATFULL on STN
ACCESSION NUMBER: 92:76274 USPATFULL
TITLE: Membrane for electrotransport transdermal drug delivery
INVENTOR(S): Theeuwes, Felix, Los Altos, CA, United States
Gyory, J. Richard, Los Altos, CA, United States
Haak, Ronald P., Cupertino, CA, United States
PATENT ASSIGNEE(S): Alza Corporation, Palo Alto, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5147296 | | 19920915 |
| APPLICATION INFO.: | US 1991-751276 | | 19910828 (7) |

DISCLAIMER DATE: 20090114
RELATED APPLN. INFO.: Division of Ser. No. US 1988-252402, filed on 3 Oct 1988, now patented, Pat. No. US 5080646, issued on 14 Jan 1992
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Pellegrino, Stephen C.
ASSISTANT EXAMINER: Rafa, Michael
LEGAL REPRESENTATIVE: Miller, D. Byron, Mandell, Edward L., Stone, Steven F.
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 899
AB A membrane capable of inhibiting agent release from a delivery system when no electrical current is flowing and yet provide minimal impedance to electrically-assisted agent delivery, useful both for incorporating into electrotransport agent delivery systems and for use in measuring agent release rates in in vitro testing.

L11 ANSWER 11 OF 17 USPATFULL on STN
ACCESSION NUMBER: 92:3184 USPATFULL
TITLE: Membrane for electrotransport transdermal drug delivery

INVENTOR(S): Theeuwes, Felix, Los Altos, CA, United States
Gyory, J. Richard, Los Altos, CA, United States
Haak, Ronald P., Cupertino, CA, United States
PATENT ASSIGNEE(S): Alza Corporation, Palo Alto, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5080646 | | 19920114 |
| APPLICATION INFO.: | US 1988-252402 | | 19881003 (7) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Pellegrino, Stephen C.
ASSISTANT EXAMINER: Rafa, Michael
LEGAL REPRESENTATIVE: Miller, D. Byron, Mandell, Edward L., Stone, Steven F.
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 870

AB A membrane capable of inhibiting agent release from a delivery system when no electrical current is flowing and yet provide minimal impedance to electrically-assisted agent delivery, useful both for incorporating into electrotransport agent delivery systems and for use in measuring agent release rates in in vitro testing.

L11 ANSWER 12 OF 17 USPATOLD on STN
ACCESSION NUMBER: 1974:63919 USPATOLD
TITLE: VOLUME REDUCTION OF RADIOACTIVE ION EXCHANGE RESINS FOR DISPOSAL
INVENTOR(S): CALMON C
PATENT ASSIGNEE(S): AEROCHEM RESEARCH LABORATORIES, INC.

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 3791981 | A | 19740212 |
| APPLICATION INFO.: | US 1971-132098 | | 19710401 |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 1971-132098 | 19710407 |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: QUARFORTH, CARL D
ASSISTANT EXAMINER: TATE, R L
LINE COUNT: 475
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 13 OF 17 USPAT2 on STN
ACCESSION NUMBER: 2001:119344 USPAT2
TITLE: Process for producing styrene sulfonate cation
INVENTOR(S): Lin, Juchui Ray, Bedford, MA, United States
Mir, Leon, Newton, MA, United States
Zheng, Yongchang, Watertown, MA, United States
PATENT ASSIGNEE(S): Ionics, Incorporated, MA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|

PATENT INFORMATION: US 6344584 B2 20020205
APPLICATION INFO.: US 2001-785846 20010216 (9)
RELATED APPLN. INFO.: Division of Ser. No. US 1998-46292, filed on 23 Mar 1998, now patented, Pat. No. US 6221248
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Henderson, Christopher
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 482
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel styrene sulfonate-based polymers and cation exchange membranes which are particularly suitable for use in electrodialysis of whey and improved methods for electrodialysis of whey are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:443889 CAPLUS
DOCUMENT NUMBER: 139:7670
TITLE: Syndiotactic hydroxystyrene polymers with low metal ion content and their manufacture
INVENTOR(S): Kawabe, Masanao
PATENT ASSIGNEE(S): Nippon Steel Chemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2003165811 | A | 20030610 | JP 2001-363016 | 20011128 |

PRIORITY APPLN. INFO.: JP 2001-363016 20011128
AB The polymers having repeating unit CH2CHC6H4OH with tacticity of C1 carbon of the Ph group being ≥30% as racemic pentad fraction by 13C-NMR and impurity metal ion content ≤10 ppb are manufactured by deprotection of protected hydroxystyrene polymers having repeating unit CH2CHC6H4OR (R = C3-30 trialkylsilyl, C4-31 alkyl, C3-30 trialkylgermanium) with tacticity similar to the former polymers in organic solvents with dielec. constant ≥3.0 with acids at pH ≤3.0 and ≥50° and reduction of metal ions in organic solvents with aqueous solns. containing acids at pH 3.0-6.0, followed by contacting with ion-exchanged H2O. The polymers are useful for photoresists. Thus, syndiotactic poly(4-tert-butyldimethylsilyloxystyrene) (racemic pentad fraction ≥95%) containing Al, Ti, Na, K, and Fe 57.3, 6.3, 1.4, 0.5, and 1.5 ppm, resp., was dissolved in THF, treated with HCl at 60° for 300 min, precipitated in H2O, washed, and dried to give a deprotected polymer, which was dissolved in a diglyme/MIBK mixture, mixed with an aqueous 5% solution of oxalic acid, stirred at 60° for 30 min, separated from an aqueous phase, washed repeatedly, and freed of MIBK to give a diglyme solution of a syndiotactic poly(hydroxystyrene) with racemic pentad fraction ≥95% and Al, Ti, Na, K, and Fe concentration <10 ppb, resp.

L11 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1969:491937 CAPLUS
DOCUMENT NUMBER: 71:91937

ORIGINAL REFERENCE NO.: 71:17149a,17152a
TITLE: Simultaneous polymerization by cationic and anionic catalysts
AUTHOR(S): Shiota, Tetsuya; Hayashi, Koichiro; Okamura, Seizo
CORPORATE SOURCE: Kyoto Univ., Kyoto, Japan
SOURCE: Memoirs of the Faculty of Engineering, Kyoto University (1969), 31(Pt. 2), 274-83
CODEN: MEKYAC; ISSN: 0023-6063
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The simultaneous polymerization of β-propiolactone (I) and N-vinylcarbazole (II) was carried out in the presence of p-MeC6H4SO3H and NaOAc. The heterogeneity of the reaction system was changed by using various kinds of solvents and was in the order: PhMe > C2H4Cl2 > dioxane > PhNO2 .simeq. I. The high heterogeneity and dielec. constant of the medium accelerated simultaneous polymerization The simultaneous polymerization of I and II proceeded in a homogeneous system. The mixture of I and II was polymerized by NaOAc in PhNO2 and then after 48 hrs., a p-MeC6H4SO3H-PhNO2 solution was added to the system. Conversion of II was increased rapidly by addition of the cationic catalyst, but I did not polymerize. iso-Bu vinyl ether polymerized in the presence of NaOAc and BF3.Et2O in PhNO2. α-Methylstyrene polymerized in the presence of a sulfonated styrene-divinylbenzene copolymer and a styrene-divinylbenzene-4-vinylpyridine copolymer or a styrene-Na acrylate copolymer.

L11 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1965:446579 CAPLUS
DOCUMENT NUMBER: 63:46579
ORIGINAL REFERENCE NO.: 63:8485c-f
TITLE: Polymerization of bifunctional compounds. VIII. Cationic polymerization of o-divinylbenzene
AUTHOR(S): Aso, Chuji; Kita, Ryuji
CORPORATE SOURCE: Kyushu Univ., Fukuoka, Japan
SOURCE: Kogyo Kagaku Zasshi (1965), 68(4), 707-10
CODEN: KGKZA7; ISSN: 0368-5462
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB cf. CA 60, 3104a; preceding abstract o-Divinylbenzene (I) was cyclopolymerized by BF3.OEt2 in PhMe. The data are given in the table. Mol. wts., M, determined with a vapor pressure osmometer at 37° in C6H6, were 2860-6750. I (moles/l.), BF3.OEt2 (moles/l.), temperature, time (hrs.), polymer yield (%), [η] (dl./g.), cyclized units (%); 0.555, 0.049, 20°, 24.0, 89.2, 0.062, 77.5; 0.795, 0.040, 14°, 2.0, 21.6, 0.056, 61.2; 0.967, 0.049, 0°, 20.0, 35.5, 0.065, 44.3; 2.430, 0.133, -15°, 24.0, 39.8, 0.135, 21.4; 0.986, 0.049, -78°, 46.0, 0.7, -, 11.0; Noncyclized, pendant C:C was determined from the ir spectra by using the 1630 cm.-1 band. The intrinsic viscosity, [η], was determined in C6H6 at 30°; [η] = 2.33 + 10-4 + M0.72, which agrees well with that of polystyrene obtained by cationic polymerization (Pepper, CA 45, 9999a). The cyclic unit content obtained was higher the lower the monomer concentration and the higher the polymerization temperature CCl4, PhMe, CHCl3, PhCl, EtNO2, and PhNO2, which have different dielec. consts., were used as the polymerization solvents with BF3.OEt2 (0.05 mole/l.) as initiator at 0° to obtain polymers containing about the same amount of PhMe-insol. material (up to 25.7%), except in the case of PhNO2 (68.3%). The difference in solvents did not have much effect on the cyclic unit content, but it affected the rates of propagation and gelation. A change in the initiator had more

effect on the cyclic unit content than that of solvents at 0° in PhMe; BF3.OEt2 gave 19.0, TiCl4-CCl3CO2H 35.7, SnCl4-CCl3CO2H 46.3, SnCl4-H2O 47.0, and SnCl4 47.8%. The difference in activation energy between the intramol. cyclization reaction and intermol. propagation reaction was 5.3 kcal./mole between 20 and -15°.

L11 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1962:426595 CAPLUS
DOCUMENT NUMBER: 57:26595
ORIGINAL REFERENCE NO.: 57:5327i,5328a-c
TITLE: Effect of the organic solvent on the properties of a carboxylic cation exchanger
AUTHOR(S): Lou, Chih-Hsien; Savitskaya, E. M.; Bruns, B. P.
SOURCE: Doklady Akademii Nauk SSSR (1961), 136, 151-4
From: Ref. Zh., Khim. 1962, Abstr. No. 23B587.
CODEN: DANKAS; ISSN: 0002-3264
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB A series of curves of potentiometric titration of a carboxylic cation exchanger (a copolymer of methyl methacrylate and divinylbenzene) in aqueous-MeOH media of varying composition was obtained. The following 3 methods were used: (1) the Kunin method (K. and Meyers, Ion-Exchange Resins, 1050 (CA 45, 1704f)), (2) the method of direct titration of the initial external solution in the presence and absence of the resin, and (3) an original, rapid titration method developed by L., et al. The courses of the neutralization curves of the carboxylic cation exchanger and of the soluble monocarboxylic acid are different. This phenomenon is attributed to the known effect of progressive weakening of the insol. polyacid (cation exchanger) during substitution of H in the resin by metal ions. According to the titration data, by using the modified Henderson equation, pK values for each composition of the medium were calculated The pK values at constant ionic strength depended linearly on the reciprocal values of the dielec. constant of the solution, which indicates constant basicity of the solvent in the resin phase. The pK values decrease with increased ionic strength of the external solution This phenomenon is attributed to the shielding of the neg. field in the resin, owing to the Donnan effect.

=> d hsi
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L11 ANSWER 1 OF 17 USPATFULL on STN
AB The present invention relates to a soluble polyfunctional vinylaromatic copolymer improved in heat resistance, resistance to thermal decomposition, solvent solubility, and processability. The soluble polyfunctional vinylaromatic polymer is obtained by cationically polymerizing, at a temperature of 20 to 120° C., one or more monomer ingredients including 20 to 100 mol % divinylaromatic compound (a) in the presence of a donor ingredient, e.g., a quaternary ammonium salt, with the aid of a Lewis acid catalyst and an initiator represented by the following general formula (1) ##STR1## wherein R.sup.1 represents hydrogen or a monovalent C.sub.1-6 hydrocarbon group; R.sup.2 represents an aromatic or aliphatic hydrocarbon group having a valence of p; Z represents halogen or C.sub.1-6 alkoxy or acyloxy; and p is an integer of 1 to 6; provided that when two or more R.sup.1's and Z's are present per molecule, they may be identical to different from each other.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d his

(FILE 'HOME' ENTERED AT 14:33:46 ON 29 FEB 2008)
SET ABBR ON PERM
SET PLURALS ON PERM

FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:34:41 ON 29 FEB 2008
L1 35313 S (POLY? OR COPOLY?)(1A)(DIVINYL BENZENE# OR DIVINYLBENZENE# OR
L2 32448 S (POLY? OR COPOLY?)(S)(INDAN### OR INDEN###)
L3 1068 S L1 AND L2
L4 922 S (DIVINYL BENZENE# OR DIVINYLBENZENE# OR DIVINYL NAPHTHALENE#
L5 201 S L3 AND L4
L6 41 S L5 AND CATION?(4A)(POLY? OR INITIAT? OR CATALY?)

FILE 'STNGUIDE' ENTERED AT 14:47:49 ON 29 FEB 2008

FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:59:27 ON 29 FEB 2008
L7 2547 S (CATION?(3A)(POLY? OR COPOLY? OR INITIAT? OR CATALY?))(S)(DIV
L8 164 S (CATION?(3A)(POLY? OR COPOLY? OR INITIAT? OR CATALY?))(S)(DIE
L9 4 S L7 AND L8
L10 19010 S (SOLVENT# OR MEDIUM OR MEDIA OR DILUENT#)(6A)(DIELECTRIC CONS
L11 17 S L7 AND L10

=> s cationic?(s)(lewis(4a)acid and initiat?)
PROXIMITY OPERATION NOT ALLOWED
Certain operators may not be nested in combination with other operators. A nested operator is valid only when it occurs at the same level or above the operator outside the nested phrase as determined by the following precedence list:

1. Numeric
2. (W), (NOTW), (A), (NOTA)
3. (S), (NOTS)
4. (P), (NOTP)
5. (L), (NOTL)
6. AND, NOT
7. OR

For example, '(MONOCLONAL(W)ANTIBOD?)(L)ANTIGEN?' is valid since (W) is above (L) on the precedence list. However, '((THIN(W)LAYER)(L)PHOSPHOLIPID#)(A)LACTONE#' is not valid since (L) is below (A) on the precedence list. The only exception is the 'OR' operator. This operator may be used in combination with any other operator. For example, '(ATOMIC OR NUCLEAR)(W)REACTOR' is valid.

```
=> s cationic?(s)(lewis(4a)acid)
L12       4145 CATIONIC?(S)(LEWIS(4A) ACID)

=> s cationic?(s)(initiat?)
L13      17286 CATIONIC?(S)(INITIAT?)

=> s l12 and l13
L14       1676 L12 AND L13

=> s l14 and l7
L15         22 L14 AND L7

=> d l15 1-22 ibib abs

L15  ANSWER 1 OF 22  USPATFULL on STN
ACCESSION NUMBER:         2007:342191  USPATFULL
TITLE:                    Process to produce a hydrocarbon rubber cement
                          utilizing a hydrofluorocarbon diluent
INVENTOR(S):              McDonald, Michael F., Kingwood, TX, UNITED STATES
                          Milner, Scott T., Somerville, NJ, UNITED STATES
                          Timothy, D. Shaffer, Hackettstown, NJ, UNITED STATES
                          Robert, N. Webb, Kingwood, TX, UNITED STATES
                          Richard, D. Hembree, Zachary, LA, UNITED STATES

                               NUMBER       KIND    DATE
                          ---------------- ------ --------
PATENT INFORMATION:       US 2007299190      A1   20071227
APPLICATION INFO.:        US 2006-473732     A1   20060623  (11)
DOCUMENT TYPE:            Utility
FILE SEGMENT:             APPLICATION
LEGAL REPRESENTATIVE:     EXXONMOBIL CHEMICAL COMPANY, 5200 BAYWAY DRIVE, P.O.
                          BOX 2149, BAYTOWN, TX, 77522-2149, US
NUMBER OF CLAIMS:         79
EXEMPLARY CLAIM:          1
NUMBER OF DRAWINGS:       1 Drawing Page(s)
LINE COUNT:               1715
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Provided for herein is a process to produce an essentially homogeneous
       single liquid phase hydrocarbon-rubber cement from a polymer slurry
       comprising a hydrocarbon-rubber, a diluent, and unreacted monomer(s),
       the process comprising:

(a) contacting the polymer slurry with a hydrocarbon solvent; and
(b) removing the diluent in amounts not sufficiently more than is necessary to
       produce the essentially homogeneous single liquid phase
       hydrocarbon-rubber cement wherein the mass fraction of monomer(s) in the
       hydrocarbon-rubber cement, based on the total amount of
       hydrocarbon-rubber present in the hydrocarbon-rubber cement, is less
       than the mass fraction of monomer(s) in the hydrocarbon-rubber slurry,
       based on the total amount of hydrocarbon-rubber present in the
       hydrocarbon-rubber slurry,
wherein the diluent comprises a hydrofluorocarbon.
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CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 2 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2007:342162 USPATFULL
TITLE: Phase separation process utilizing a hydrofluorocarbon
INVENTOR(S): McDonald, Michael F., Kingwood, TX, UNITED STATES
Milner, Scott T., Somerville, NJ, UNITED STATES
Timothy, D. Shaffer, Hackettstown, NJ, UNITED STATES
Robert, N. Webb, Kingwood, TX, UNITED STATES
Richard, D. Hembree, Zachary, LA, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2007299161 | A1 | 20071227 | |
| APPLICATION INFO.: | US 2006-474214 | A1 | 20060623 | (11) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: EXXONMOBIL CHEMICAL COMPANY, 5200 BAYWAY DRIVE, P.O. BOX 2149, BAYTOWN, TX, 77522-2149, US
NUMBER OF CLAIMS: 63
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 2175
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Provided for herein is a process for separating a hydrocarbon-rubber from a hydrofluorocarbon diluent comprising contacting a polymer slurry comprising the hydrocarbon-rubber dispersed within the hydrofluorocarbon diluent with a hydrocarbon solvent capable of dissolving the hydrocarbon-rubber, to produce a first liquid phase and a second liquid phase, and separating the first liquid phase from the second liquid phase.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 3 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2007:178102 USPATFULL
TITLE: Soluble polyfunctional vinyl aromatic polymer and method of producing the same
INVENTOR(S): Kawabe, Masanao, Fukuoka, JAPAN
PATENT ASSIGNEE(S): NIPPON STEEL CHEMICAL CO., LTD., Tokyo, JAPAN (non-U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2007155923 | A1 | 20070705 | |
| APPLICATION INFO.: | US 2005-586969 | A1 | 20050126 | (10) |
| | WO 2005-JP1000 | | 20050126 | |
| | | | 20060725 | PCT 371 date |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 2004-24154 | 20040130 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP, 1725 K STREET, NW, SUITE 1000, WASHINGTON, DC, 20006, US
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
LINE COUNT: 1453
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a soluble polyfunctional vinylaromatic copolymer improved in heat resistance, resistance to thermal decomposition, solvent solubility, and processability. The soluble polyfunctional vinylaromatic polymer is obtained by cationically polymerizing, at a temperature of 20 to 120° C., one or more monomer ingredients including 20 to 100 mol % divinylaromatic compound (a) in the presence of a donor ingredient, e.g., a quaternary ammonium salt, with the aid of a Lewis acid catalyst and an initiator represented by the following general formula (1) ##STR1## wherein R.sup.1 represents hydrogen or a monovalent C.sub.1-6 hydrocarbon group; R.sup.2 represents an aromatic or aliphatic hydrocarbon group having a valence of p; Z represents halogen or C.sub.1-6 alkoxy or acyloxy; and p is an integer of 1 to 6; provided that when two or more R.sup.1's and Z's are present per molecule, they may be identical to different from each other.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 4 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2007:23267 USPATFULL
TITLE: Polymers having covalently bound therapeutic agents
INVENTOR(S): Richard, Robert E., Wrentham, MA, UNITED STATES
Faust, Rudolf, Lexington, MA, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2007020308 | A1 | 20070125 | |
| APPLICATION INFO.: | US 2005-184223 | A1 | 20050719 | (11) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MAYER & WILLIAMS PC, 251 NORTH AVENUE WEST, 2ND FLOOR, WESTFIELD, NJ, 07090, US
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
LINE COUNT: 1026
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Therapeutic polymers are described, which contain at least one polymeric portion and at least one therapeutic agent. The therapeutic agent and the polymeric portion are covalently linked via one or more linkages which hydrolyze in an aqueous environment, for example, one or more linkages selected from an Si--N linkage, an Si--O linkage, and a combination of the same. Other aspects the invention are directed to methods of making the above therapeutic polymers.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 5 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2006:37507 USPATFULL
TITLE: Polmer-coated particles for chemical mechanical polishing
INVENTOR(S): Partch, Richard E., Hannawa Falls, NY, UNITED STATES
Barney, Nathaniel A., Schenectady, NY, UNITED STATES
Wang, Hongyu, Wilmington, DE, UNITED STATES
Quanci, John, Haddonfield, NJ, UNITED STATES

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2006032146 | A1 | 20060216 | |
| | US 7182798 | B2 | 20070227 | |
| APPLICATION INFO.: | US 2004-903425 | A1 | 20040729 | (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Rohm and Haas Electronic CMP Holdings, Inc., Suite 1300, 1105 North Market Street, Wilmington, DE, 19899, US
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
LINE COUNT: 1045
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The polishing composition is suitable for chemical mechanical polishing magnetic, optical, semiconductor or silicon substrates. The polishing composition includes abrasive particles in a liquid media. The abrasive particles have a particle core, the particle core having a hardness and a polymeric shell physisorbed to and encapsulating the particle core. The polymeric shell has a solid structure and a hardness lower than the hardness of the particle core. The abrasive particles have an average particle size of less than or equal to about 2 micrometers dispersed in the liquid media.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 6 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2006:27604 USPATFULL
TITLE: Manufacturing of polymer-coated particles for chemical mechanical polishing
INVENTOR(S): Wang, Hongyu, Wilmington, DE, UNITED STATES
Quanci, John, Haddonfield, NJ, UNITED STATES
Partch, Richard E., Hannawa Falls, NY, UNITED STATES
Barney, Nathaniel A., Schenectady, NY, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2006024434 | A1 | 20060202 |
| APPLICATION INFO.: | US 2004-909242 | A1 | 20040729 (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Rohm and Haas, Electronic Materials CMP Holdings, Inc., Suite 1300, 1105 North Market Street, Wilmington, DE, 19899, US
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
LINE COUNT: 1018
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method of manufacturing polymer-coated particles is useful for chemical mechanical polishing magnetic, optical, semiconductor or silicon substrates. First it provides a dispersion of particle cores in a non-aqueous solvent. Then introducing a polymeric precursor into the dispersion to react the polymeric precursor forms a polymer. The polymer coats at least a portion of the surface of the particle cores with the polymer and forms the polymer-coated particles having a solid outer polymeric shell. Substituting the non-aqueous solvent with water forms an aqueous mixture containing the polymer-coated particles. And it forms an aqueous chemical mechanical polishing formulation with the polymer-coated particles without drying the polymer-coated particles.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 7 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2005:293680 USPATFULL
TITLE: Cationic polymerizable adhesive composition and

anisotropically electroconductive adhesive composition
INVENTOR(S): Yamaguchi, Hiroaki, Hachioji-shi, JAPAN
Akiyama, Ryota, Hachioji-city, JAPAN

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2005256230 | A1 | 20051117 | |
| APPLICATION INFO.: | US 2003-502501 | A1 | 20030219 | (10) |
| | WO 2003-US4944 | | 20030219 | |
| | | | 20040723 | PCT 371 date |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | JP 2002-99071 | 20020401 |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: 3M INNOVATIVE PROPERTIES COMPANY, PO BOX 33427, ST. PAUL, MN, 55133-3427, US
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1-6
LINE COUNT: 670
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In a cationic polymerizable adhesive composition comprising (A) a cationic polymerizable monomer selected from an epoxy monomer, a vinyl ether monomer, or a mixture thereof; (B) a cationic polymerization catalyst; and (C) a solvent for the cationic polymerization catalyst, a mixture of a good solvent and a poor solvent for the cationic polymerization catalyst is used as the solvent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 8 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2005:166101 USPATFULL
TITLE: End-capped polymer chains and products thereof
INVENTOR(S): Faust, Rudolf, Lexington, MA, UNITED STATES
Mueller, Axel H.E., Wiesbaden, GERMANY, FEDERAL REPUBLIC OF

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 2005143526 | A1 | 20050630 | |
| APPLICATION INFO.: | US 2004-872134 | A1 | 20040618 | (10) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | US 2003-480121P | 20030620 (60) |

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: LAHIVE & COCKFIELD, LLP., 28 STATE STREET, BOSTON, MA, 02109, US
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Page(s)
LINE COUNT: 885
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are described herein for converting carbocationically terminated polymers to anionically terminated polymers. These methods comprise: (a) providing a carbocationically terminated polymeric moiety; (b) reacting the carbocationically terminated polymeric moiety with a heterocyclic compound of the formula ##STR1## where --X-- is selected from

--S--, --O--, --NH-- and --NR--, and where R is an alkyl group or an aryl group, thereby providing an end-capped polymeric moiety; and (c) reacting the end-capped polymeric moiety with an organolithium compound to yield an anionically terminated polymeric moiety. Also described are block copolymers in which a first polymer block comprising cationically polymerized monomers is linked to a second polymer block comprising anionically polymerized monomers by a ##STR2## group, as well as a polymer in which a polymer block comprising cationically polymerized monomers is linked to a halogenated silane residue or a carbosilane residue by a ##STR3## group.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 9 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2002:179215 USPATFULL
TITLE: Lewis acid-catalyzed polymerization of biological oils and resulting polymeric materials
INVENTOR(S): Larock, Richard C., Ames, IA, UNITED STATES
Hanson, Mark, West Lafayette, IN, UNITED STATES
Li, Fengkui, Ames, IA, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2002095007 | A1 | 20020718 |
| APPLICATION INFO.: | US 2001-969874 | A1 | 20011004 (9) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2000-584405, filed on 1 Jun 2000, PENDING Continuation-in-part of Ser. No. US 1998-190056, filed on 12 Nov 1998, PATENTED
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP, 2101 L STREET NW, WASHINGTON, DC, 20037-1526
NUMBER OF CLAIMS: 103
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 57 Drawing Page(s)
LINE COUNT: 6243
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Biological oils, conjugated biological oils, and metathesized or cometathesized biological oils are polymerized or co-polymerized with comonomers, which include styrene and divinylbenzene, norbornadiene and dicyclopentadiene, using a BF.sub.3.OEt.sub.2 initiator to provide plastics from renewable resources. The compositions are thermosetting polymers having damping and shape memory characteristics. These compositions can become industrial products of an unlimited variety.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 10 OF 22 USPATFULL on STN
ACCESSION NUMBER: 2000:7342 USPATFULL
TITLE: Initiator systems containing vanadium tetrachloride for the (co)polymerization of isoolefins
INVENTOR(S): Langstein, Gerhard, Kurten, Germany, Federal Republic of
Bohnenpoll, Martin, Leverkusen, Germany, Federal Republic of
Denninger, Uwe, Bergisch Gladbach, Germany, Federal Republic of
Obrecht, Werner, Moers, Germany, Federal Republic of
Plesch, Peter, North Staffordshire, United Kingdom
PATENT ASSIGNEE(S): Bayer AG, Germany, Federal Republic of (non-U.S.

corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6015841 | | 20000118 |
| APPLICATION INFO.: | US 1997-884969 | | 19970630 (8) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | DE 1996-19627529 | 19960709 |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Berman, Susan W.
LEGAL REPRESENTATIVE: Connolly & Hutz
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 579
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to an initiator system for the polymerization of isoolefins having 4 to 16 carbon atoms, optionally with monomers polymerizable with isoolefins, the system consisting of or one or more aromatic or heteroaromatic, polycyclic hydrocarbons and an aged, organic solution of vanadium tetrachloride, wherein the concentration of the vanadium tetrachloride is 0.01 mmol to 500 mmol per liter of solvent and the molar ratio of aged vanadium tetrachloride to polycyclic hydrocarbons is in the range from 100:1 to 1:100.

It is possible by means of the initiator system according to the invention to produce polyisoolefins, in particular butyl rubbers, at relatively high temperatures with only a low gel content and of a sufficiently high molecular weight.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 11 OF 22 USPATFULL on STN
ACCESSION NUMBER: 96:70223 USPATFULL
TITLE: Marking materials containing retroreflecting fillers
INVENTOR(S): Morrison, Jan D., Webster, NY, United States
Grabowski, Edward F., Webster, NY, United States
Dotschkal, Virginia E., Newark, NY, United States
Lynch, Anita P., Webster, NY, United States
May, Jerome E., Pittsford, NY, United States
PATENT ASSIGNEE(S): Xerox Corporation, Stamford, CT, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5543177 | | 19960806 |
| APPLICATION INFO.: | US 1993-161619 | | 19931206 (8) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1992-971742, filed on 5 Nov 1992, now patented, Pat. No. US 5397673, issued on 14 Mar 1995

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Lusignan, Michael
LEGAL REPRESENTATIVE: Byorick, Judith L.
NUMBER OF CLAIMS: 35
EXEMPLARY CLAIM: 27
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 5 Drawing Page(s)

LINE COUNT: 3158
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed are marking materials containing retroreflective fillers and processes for the use thereof. In one embodiment, images containing retroreflective fillers are generated on paper by any suitable means, such as electrostatic imaging and development with either dry or liquid developers, ink jet printing, strip-out development processes, or the like, and the images thus generated are used to control a document reproduction system. In another embodiment, images containing retroreflective fillers are generated on a movable part in an imaging apparatus, such as an imaging member, an intermediate transfer member, or the like, by any suitable means, and the images thus generated are used to impart information regarding the relative position of the movable part with respect to the copier or printer containing the movable part.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 12 OF 22 USPATFULL on STN
ACCESSION NUMBER: 95:22795 USPATFULL
TITLE: Curable strip-out development processes
INVENTOR(S): Watson, P. Keith, Rochester, NY, United States
Morrison, Ian D., Webster, NY, United States
PATENT ASSIGNEE(S): Xerox Corporation, Stamford, CT, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5397673 | | 19950314 |
| APPLICATION INFO.: | US 1992-971742 | | 19921105 (7) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Kight, III, John
ASSISTANT EXAMINER: Mosley, T.
LEGAL REPRESENTATIVE: Byorick, Judith L.
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
LINE COUNT: 1490
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is a process for forming images which comprises applying a curable liquid to a first substrate in an image pattern, optionally transferring the curable liquid image to a second substrate, subsequently contacting the curable liquid image with a solid developer so that the developer adheres to the curable liquid image, optionally transferring the curable liquid and the solid developer in image pattern to a third substrate, and curing the curable liquid in the image pattern to a solid.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 13 OF 22 USPATFULL on STN
ACCESSION NUMBER: 95:20618 USPATFULL
TITLE: Curable liquid developers
INVENTOR(S): Morrison, Ian D., Webster, NY, United States
Hsieh, Bing R., Webster, NY, United States
Taylor, Jerry H., Webster, NY, United States
PATENT ASSIGNEE(S): Xerox Corporation, Stamford, CT, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|

| | | | |
|---|---|---|---|
| PATENT INFORMATION: | US 5395724 | | 19950307 |
| APPLICATION INFO.: | US 1993-13132 | | 19930203 (8) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1991-654693, filed on 13 Feb 1991, now abandoned | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Rosasco, S. | | |
| LEGAL REPRESENTATIVE: | Byorick, Judith L. | | |
| NUMBER OF CLAIMS: | 19 | | |
| EXEMPLARY CLAIM: | 3 | | |
| LINE COUNT: | 2188 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed is a liquid developer comprising a colorant and a substantial amount of a curable liquid vehicle having a viscosity of no more than about 500 centipoise and a resistivity of no less than about 10.sup.8 ohm-cm. One embodiment of the invention is directed to an electrophoretic liquid developer comprising a substantial amount of a curable liquid vehicle having a viscosity of no more than about 20 centipoise and a resistivity of no less than about 5+10.sup.9 ohm-cm, a charge control agent, and colored particles capable of becoming charged and migrating through the liquid vehicle to develop an electrostatic latent image. Another embodiment of the invention is directed to a polarizable liquid developer comprising a colorant and a substantial amount of a curable liquid vehicle having a viscosity of from about 25 to about 500 centipoise and a resistivity of from about 10.sup.8 to about 10.sup.11 ohm-cm. Yet another embodiment of the invention is directed to a photoelectrophoretic liquid developer comprising a substantial amount of a curable liquid vehicle having a viscosity of no more than about 20 centipoise and a resistivity of no less than about 5+10.sup.9 ohm-cm and photosensitive colored particles. A specific embodiment of the invention is directed to a liquid developer comprising a colorant, a substantial amount of a curable liquid vehicle having a viscosity of no more than about 500 centipoise and a resistivity of no less than about 10.sup.8 ohm-cm, and solid particles containing an initiator substantially insoluble in the liquid vehicle and capable, upon activation, of initiating polymerization of the curable liquid vehicle. In one embodiment, the colorant comprises pigment particles and the initiator is contained on the surfaces of the pigment particles. In another embodiment, the developer contains polymeric particles and the initiator is contained on the surfaces of the polymeric particles. In yet another embodiment, the colorant comprises toner particles which comprise a pigment and a polymer, and the initiator is contained on the surfaces of the toner particles. In still another embodiment, the initiator is contained on the surfaces of solid particles such as silicas, clays, or the like. The initiator can also be contained within the solid particles.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 14 OF 22 USPATFULL on STN

| | |
|---|---|
| ACCESSION NUMBER: | 94:105500 USPATFULL |
| TITLE: | Polyolefin polymer and method of making same |
| INVENTOR(S): | Matlack, Albert S., Hockessin, DE, United States |
| PATENT ASSIGNEE(S): | Hercules Incorporated, Wilmington, DE, United States (U.S. corporation) |

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 1388 | | 19941206 |

APPLICATION INFO.: US 1992-997303 19921223 (7)
DOCUMENT TYPE: Statutory
FILE SEGMENT: Granted
PRIMARY EXAMINER: Stoll, Robert L.
ASSISTANT EXAMINER: Anthony, Joseph D.
LEGAL REPRESENTATIVE: Kuller, Mark D.
NUMBER OF CLAIMS: 33
EXEMPLARY CLAIM: 1
LINE COUNT: 2432
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A polyolefin composition comprises repeating units of a metathesis polymerizable olefin monomer, a metathesis polymerization procatalyst, a metathesis polymerization procatalyst activator, and at least one member selected from the group consisting of: (i) a Lewis acid catalyst and a Lewis acid cocatalyst, effective to obtain a residual metathesis polymerizable olefin monomer level of from 0 to 0.25 weight percent, based on the weight of the polyolefin; (ii) an anionic polymerization catalyst; (iii) a free radical polymerization initiator; and (iv) a hydrosilation polymerization catalyst. The method for making the composition is also disclosed. The use of metathesis polymerization in conjunction with another type of polymerization can achieve a variety of beneficial effects, including a very low level of residual metathesis polymerizable monomer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 15 OF 22 USPATFULL on STN
ACCESSION NUMBER: 94:99781 USPATFULL
TITLE: Liquid developers having curable liquid vehicles
INVENTOR(S): Morrison, Ian D., Webster, NY, United States
Hsieh, Bing R., Webster, NY, United States
Taylor, Jerry H., Webster, NY, United States
PATENT ASSIGNEE(S): Xerox Corporation, Stamford, CT, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5364726 | | 19941115 |
| APPLICATION INFO.: | US 1993-17055 | | 19930202 (8) |

RELATED APPLN. INFO.: Division of Ser. No. US 1991-654693, filed on 13 Feb 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-501585, filed on 30 Mar 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Goodrow, John
LEGAL REPRESENTATIVE: Byorick, Judith L.
NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
LINE COUNT: 2094
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed is a liquid developer comprising a colorant and a substantial amount of a curable liquid vehicle having a viscosity of no more than about 500 centipoise and a resistivity of no less than about 10.sub.8 ohm-cm. One embodiment of the invention is directed to an electrophoretic liquid developer comprising a substantial amount of a curable liquid vehicle having a viscosity of no more than about 20 centipoise and a resistivity of no less than about 5+10.sup.9 ohm-cm, a charge control agent, and colored particles capable of becoming charged and migrating through the liquid vehicle to develop an

electrostatic latent image. Another embodiment of the invention is directed to a polarizable liquid developer comprising a colorant and a substantial amount of a curable liquid vehicle having a viscosity of from about 25 to about 500 centipoise and a resistivity of from about 10.sup.8 to about 10.sup.11 ohm-cm. Yet another embodiment of the invention is directed to a photoelectrophoretic liquid developer comprising a substantial amount of a curable liquid vehicle having a viscosity of no more than about 20 centipoise and a resistivity of no less than about 5+10.sup.9 ohm-cm and photosensitive colored particles. A specific embodiment of the invention is directed to a liquid developer comprising a colorant, a substantial amount of a curable liquid vehicle having a viscosity of no more than about 500 centipoise and a resistivity of no less than about 10.sup.8 ohm-cm, and solid particles containing an initiator substantially insoluble in the liquid vehicle and capable, upon activation, of initiating polymerization of the curable liquid vehicle. In one embodiment, the colorant comprises pigment particles and the initiator is contained on the surfaces of the pigment particles. In another embodiment, the developer contains polymeric particles and the initiator is contained on the surfaces of the polymeric particles. In yet another embodiment, the colorant comprises toner particles which comprise a pigment and a polymer, and the initiator is contained on the surfaces of the toner particles. In still another embodiment, the initiator is contained on the surfaces of solid particles such as silicas, clays, or the like. The initiator can also be contained within the solid particles.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 16 OF 22 USPATFULL on STN

| | |
|---|---|
| ACCESSION NUMBER: | 93:63058 USPATFULL |
| TITLE: | Method of forming images using curable liquid |
| INVENTOR(S): | Morrison, Ian D., Webster, NY, United States<br>Tarnawskyj, Christine J., Rochester, NY, United States<br>Hsieh, Bing R., Webster, NY, United States<br>Morehouse, Jr., Paul W., Webster, NY, United States |
| PATENT ASSIGNEE(S): | Xerox Corporation, Stamford, CT, United States (U.S. corporation) |

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5232812 | | 19930803 |
| APPLICATION INFO.: | US 1992-946696 | | 19920918 (7) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Martin, Roland | | |
| LEGAL REPRESENTATIVE: | Byorick, Judith L. | | |
| NUMBER OF CLAIMS: | 17 | | |
| EXEMPLARY CLAIM: | 1 | | |
| LINE COUNT: | 1010 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed is a process for forming images which comprises generating an electrostatic image on an imaging member, developing the electrostatic image with a toner, optionally transferring the developed toner image from the imaging member to a substrate, applying to the developed toner image a curable liquid in which the toner is at least partially soluble, and curing the liquid to a solid.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 17 OF 22 USPATFULL on STN

ACCESSION NUMBER: 92:25515 USPATFULL
TITLE: Radiation-sensitive, ethylenically unsaturated, copolymerizable sulfonium salts and their preparation
INVENTOR(S): Boettcher, Andreas, Nussloch, Germany, Federal Republic of
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Ludwigshafen, Germany, Federal Republic of (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5101053 | | 19920331 |
| APPLICATION INFO.: | US 1990-462558 | | 19900109 (7) |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | DE 1989-3902114 | 19890125 |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Dees, Jose G.
ASSISTANT EXAMINER: Nazario, Porfirio
LEGAL REPRESENTATIVE: Keil & Weinkauf
NUMBER OF CLAIMS: 3
EXEMPLARY CLAIM: 1
LINE COUNT: 737
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Radiation sensitive sulfonium salts which contain (1) a sulfonium initiator portion, (2) a spacer portion, and (3) a reactive group portion. The spacer portion has the formula "-o-w- x-z-" wherein "w" is a single bond or one of --C(O)--, --C(O)O--, --C(O)S--, --C(O)NH-- --C(O)N(alkyl)--, --C(S)--, --C(S)S--,--S(O)--, --S(O)(O)--, or --S(O)(O)O--; "X" is an unsubstituted or substituted alkylene radical; and "Z" is --O--, --NH--, --N(C,--C.sub.6 -alkyl)--, or --N(phenyl)--. The reactive group portion is --CH.dbd.CH.sub.2 or --C(O)--C(Y).dbd.CH.sub.2 wherein "Y" is H, C.sub.1 -.sub.6 -alkyl, or phenyl. The sulfonium salts find use in curing monomers which can be subjected to cationic polymerization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 18 OF 22 USPATFULL on STN
ACCESSION NUMBER: 89:100483 USPATFULL
TITLE: Catalytic process and systems
INVENTOR(S): Neely, James W., Dresher, PA, United States
PATENT ASSIGNEE(S): Rohm and Haas Company, Philadelphia, PA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 4888209 | | 19891219 |
| APPLICATION INFO.: | US 1987-109643 | | 19871202 (7) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1986-833423, filed on 21 Feb 1986, now patented, Pat. No. US 4719145 which is a continuation of Ser. No. US 1983-536925, filed on 28 Sep 1983, now abandoned | | |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Beck, Shrive
ASSISTANT EXAMINER: Dang, Vi Duong
LEGAL REPRESENTATIVE: Adler, Marc S.
NUMBER OF CLAIMS: 13

EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1251
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process is provided for conducting or catalyzing a chemical reaction on a surface by depositing on the surface an adherent monolayer of positively charged polymer particles containing an active agent distributed throughout the polymer and contacting the deposited adherent monolayer with a suitable reactant. The positively charged polymer particles have diameters of less than about 3 micrometers and preferably less than 1 micrometer. The polymer particles are suspended in water to form an aqueous colloidal dispersion. The dispersion is useful as a stable catalyst system and particularly useful for complete electroless deposition of a conductive metal on printed circuit board surfaces and the walls of throughholes formed therein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 19 OF 22 USPATFULL on STN
ACCESSION NUMBER: 89:94007 USPATFULL
TITLE: Compositions comprising encapsulated particles and their preparation
INVENTOR(S): Graham, Neil B., Bearsden, Scotland
Rashid, Abdul, Glasgow, Scotland
Rao, Koritala P., Glasgow, Scotland
PATENT ASSIGNEE(S): National Research Development Corporation, London, United Kingdom (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 4882166 | | 19891121 |
| APPLICATION INFO.: | US 1987-88539 | | 19870820 (7) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1986-840540, filed on 17 Mar 1986, now abandoned which is a continuation of Ser. No. US 1982-430360, filed on 30 Sep 1982, now abandoned | | |

| | NUMBER | DATE |
|---|---|---|
| PRIORITY INFORMATION: | GB 1981-29575 | 19810930 |
| | GB 1982-26355 | 19820916 |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Lovering, Richard D.
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 904
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A composition which comprises at least one solid or liquid particle comprising at least one active substance, the or a plurality of such particles being encapsulated by the in situ cationic (co)polymerization there on of at least on cationically polymerizable monomer or prepolymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 20 OF 22 USPATFULL on STN
ACCESSION NUMBER: 88:2818 USPATFULL
TITLE: Catalytic process and systems

INVENTOR(S): Neely, James W., Dresher, PA, United States
PATENT ASSIGNEE(S): Rohm and Haas Company, Philadelphia, PA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 4719145 | | 19880112 |
| APPLICATION INFO.: | US 1986-833423 | | 19860221 (6) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1983-536925, filed on 28 Sep 1983, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Bell, Janyce A.
LEGAL REPRESENTATIVE: Adler, Marc S.
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1,7,11
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1322
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process is provided for conducting or catalyzing a chemical reaction on a surface by depositing on the surface an adherent monolayer of positively charged polymer particles containing an active agent distributed throughout the polymer and contacting the deposited adherent monolayer with a suitable reactant. The positively charged polymer particles have diameters of less than about 3 micrometers and preferably less than 1 micrometer. The polymer particles are suspended in water to form an aqueous colloidal dispersion. The dispersion is useful as a stable catalyst system and particularly useful for complete electroless deposition of a conductive metal on printed circuit board surfaces and the walls of through-holes formed therein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 21 OF 22 USPAT2 on STN
ACCESSION NUMBER: 2006:37507 USPAT2
TITLE: Polymer-coated particles for chemical mechanical polishing
INVENTOR(S): Partch, Richard E., Hannawa Falls, NY, UNITED STATES
Barney, Nathaniel A., Schenectady, NY, UNITED STATES
Wang, Hongyu, Wilmington, DE, UNITED STATES
Quanci, John, Haddonfield, NJ, UNITED STATES
PATENT ASSIGNEE(S): Rohm and Haas Electronic Materials CMP Holdings, Inc., Newark, DE, UNITED STATES (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 7182798 | B2 | 20070227 |
| APPLICATION INFO.: | US 2004-903425 | | 20040729 (10) |

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Marcheschi, Michael
LEGAL REPRESENTATIVE: Biederman, Blake T.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
LINE COUNT: 1046
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The polishing composition is suitable for chemical mechanical polishing magnetic, optical, semiconductor or silicon substrates. The polishing composition includes abrasive particles in a liquid media. The abrasive particles have a particle core, the particle core having a hardness and

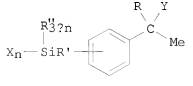
a polymeric shell physisorbed to and encapsulating the particle core. The polymeric shell has a solid structure and a hardness lower than the hardness of the particle core. The abrasive particles have an average particle size of less than or equal to about 2 micrometers dispersed in the liquid media.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 22 OF 22 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:756751 CAPLUS
DOCUMENT NUMBER: 133:322310
TITLE: Preparation of living cationic polymers using silyl-functional aromatic initiators
INVENTOR(S): Faust, Rudolf; Hadjikyriacou, Savvas E.; Roy, Aroop Kumar; Suzuki, Toshio
PATENT ASSIGNEE(S): Dow Corning Corp., USA; University of Massachusetts Lowell
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000063256 | A1 | 20001026 | WO 2000-US9788 | 20000412 |
| W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 6194597 | B1 | 20010227 | US 1999-292333 | 19990415 |
| EP 1177219 | A1 | 20020206 | EP 2000-925944 | 20000412 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2002542343 | T | 20021210 | JP 2000-612341 | 20000412 |
| PRIORITY APPLN. INFO.: | | | US 1999-292333 A | 19990415 |
| | | | WO 2000-US9788 W | 20000412 |

OTHER SOURCE(S): MARPAT 133:322310
GI



I

AB Silyl-functional living cationic polymers which can be subsequently coupled to form moisture-curable telechelic polymers are prepared by cationic polymerizing ≥1 cationically polymerizable monomers in the presence of Lewis acids

and silyl-functional aromatic initiators I (R = H or Me; R' = divalent C1-6 aliphatic hydrocarbon group; R" = C1-10 alkyl, C6-10 aryl; X, Y = halogen; n = 1-3). Thus, isobutylene was polymerized in the presence of TiCl4 and I (R, R" = Me; R' = isopropyl; X , Y = Cl; n = 2) prepared from 1,3-diisopropenylbenzene, dichloromethylsilane and HCl to give a polymer with number average mol. weight 3400 and polydispersity 1.31.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L15 ANSWER 9 OF 22 USPATFULL on STN

ACCESSION NUMBER: 2002:179215 USPATFULL

TITLE: Lewis acid-catalyzed polymerization of biological oils and resulting polymeric materials

INVENTOR(S): Larock, Richard C., Ames, IA, UNITED STATES
Hanson, Mark, West Lafayette, IN, UNITED STATES
Li, Fengkui, Ames, IA, UNITED STATES

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 2002095007 | A1 | 20020718 |
| APPLICATION INFO.: | US 2001-969874 | A1 | 20011004 (9) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2000-584405, filed on 1 Jun 2000, PENDING Continuation-in-part of Ser. No. US 1998-190056, filed on 12 Nov 1998, PATENTED

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP, 2101 L STREET NW, WASHINGTON, DC, 20037-1526

NUMBER OF CLAIMS: 103

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 57 Drawing Page(s)

LINE COUNT: 6243

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD [0235] The Lewis acid-initiated cationic homopolymerization of Norway fish oil ethyl ester (NFO) or the corresponding conjugated fish oil (CFO) and their copolymerization with various alkene comonomers have been investigated. Among the Lewis acids employed, boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2=BFE) has been found to be the most effective initiator for cationic polymerization of the NFO and CFO systems. The BFE-initiated homopolymerization of NFO generally results in low molecular weight viscous oils, while that of the CFO leads to a solid elastic gel with a gel time of more than 72 hours at room temperature. Copolymerization of the NFO or CFO with some alkene comonomers significantly facilitates gelation. The gel times are largely dependent upon the stoichiometry, the type of fish oil and the alkene comonomer. After post-curing at elevated temperatures, the cationic copolymerization affords polymers ranging from soft rubbery materials to rigid plastics. These NFO and CFO polymers are composed of highly crosslinked materials and a certain amount of free oils, and have been found to be fully cured theromosets. Generally, CFO polymers appear to be harder than the corresponding NFO polymers. However, the thermal properties of the bulk polymers are similar to each other, and their insoluble extracts exhibit much higher thermal stability than the bulk thermosets.

DETD [0249] Initiators for Cationic Homopolymerization and Copolymerization of Fish Oils

DETD [0250] Lewis acids, i.e. AlCl.sub.3, SnCl.sub.4.5H.sub.2O, TiCl.sub.4, ZnCl.sub.2, FeCl.sub.3, SnCl.sub.4, BCl.sub.3, BF.sub.3.OEt.sub.2 and sulfuric acid, have proved to be very effective initiators for cationic polymerizations. While the simple homopolymerization of NFO or CFO by the above initiators leads to viscous oils in most cases, copolymerization of the NFO or CFO with some alkene comonomers, such as divinylbenzene (DVB), norbornadiene (NBD) and dicyclopentadiene (DCP), has afforded viable solid polymeric materials. When 30% of alkene comonomers are employed, the initiators AlCl.sub.3, SnCl.sub.4.5H.sub.2O, TiCl.sub.4 and ZnCl.sub.2 all produce heterogeneous mixtures of solid materials and viscous oils. The same reaction initiated by FeCl.sub.3 or sulfuric acid produces soft solids. Anhydrous SnCl.sub.4 affords a hard, brittle solid that appears to have a darker layer on the bottom. A solution of BCl.sub.3 in CH.sub.2Cl.sub.2 (1 M) produced only a dark-brown, free-flowing oil. On the other hand, boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2=BFE) produces rigid plastics, and appears to be the best initiator employed in this study.

DETD [0251] Mechanism of the BFE-Initiated Cationic Copolymerization

DETD [0252] The BFE-initiated cationic polymerization of simple alkenes is well-understood. The initiation and propagation mechanisms are shown in FIG. 37. The initiation process occurs in two steps. The BFE first reacts with a small amount of water that may be present in the reaction mixture to produce the hydrate complex. The boron trifluoride hydrate then reacts with the alkene to produce the initiator-coinitiator complex. Propagation then may occur through subsequent insertions of the alkene monomer into the initiator-coinitiator complex. Termination may occur at any time during the polymerization through chain transfer to monomer, chain transfer to polymer, or through spontaneous termination involving the donation of a proton from the propagating ion pair to the counterion regenerating the boron trifluoride hydrate and producing a double bond in the polymer.

DETD [0253] The BFE-initiated homopolymerization or copolymerization of the NFO or CFO with alkene comonomers is assumed to follow a similar cationic mechanism. The initiation processes may be similar to those mentioned above. However, the polyunsaturation of the NFO and CFO, plus the presence of several different alkene comonomers in these reactions, may complicate the chain propagation mechanisms. The homopolymerization of the NFO or CFO occurs by repetitive attack by an electrophilic carbocation on the $\pi$ systems of the fatty acid ester molecules. From the standpoint of the structures in FIG. 36, the fatty acid ethyl esters may not be sufficiently nucleophilic to support extensive chain propagation, or steric hindrance of the long ethyl ester molecules may inhibit the chain propagation of .about..about.M.sub.1M.sub.1.sup.+ after cationic initiation (M.sub.1 represent a molecule of NFO or CFO). Thus, simple homopolymerization of the NFO or CFO results in only low molecular weight viscous oils in most cases. The introduction of small alkene comonomers (M.sub.2) not only increases the nucleophilicity of the reactants, but also reduces the steric hindrance by generating .about..about.M.sub.1M.sub.2.sup.+ species during chain propagation, which results in much higher molecular weight solid polymers.

DETD [0254] Due to the multiple functional groups in the fish oils and the alkene comonomers, the polymers formed by cationic copolymerization are expected to be thermosets. The curing of the thermosets through a cationic mechanism may involve several steps. Copolymerization is also initiated by boron trifluoride

diethyl etherate by the formation and linear growth of chains that soon begin to branch, and then crosslink. As the reaction proceeds, the increase in molecular weight accelerates, and eventually several chains become linked together into a network of infinite molecular weight, which corresponds to the gel point, an irreversible transformation from a viscous liquid to an elastic gel or rubber. The polymers lose their ability to flow and are not readily processable beyond this point.

DETD [0258] The gelation of the cationic copolymerization has been measured by approximating the time it takes for the liquid reactants to reach a certain high viscosity, i.e. elastic gel. The homopolymerization of NFO initiated by BF.sub.3.OEt.sub.2 results in viscous oils, and does not gel at all at room temperature and above.

DETD [0287] The NFO and CFO have proven to be cationically polymerizable monomers. Homopolymerization of the NFO or CFO only affords low molecular weight viscous oils in most cases. Copolymerization of NFO or CFO with a wide range of alkene comonomers results in viable solid plastics within appropriate stoichiometries. Among a number of Lewis acids, boron trifluoride diethyl etherate (BFE) has proven to be the most effective initiator for copolymerization. Comonomers, such as divinylbenzene, norbornadiene and dicyclopentadiene, are necessary for copolymerization to afford viable thermoset plastics. The gelation process of the copolymerization is largely dependent upon the stoichiometry, the type of comonomer employed, and the reaction conditions. Following post-curing at elevated temperatures, the BFE-initiated copolymerization affords solid materials ranging from soft rubbers to rigid plastics, which appear to be fully cured thermosets.

DETD [0294] Polymeric materials have been prepared from the cationic copolymerization of fish oil ethyl ester (NFO), conjugated fish oil ethyl ester (CFO) or triglyceride fish oil (TFO) with styrene and divinylbenzene initiated by boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2). These materials are typical thermosetting polymers with crosslink densities ranging from 1.1+10.sup.2 to 2.5+10.sup.3 mol/m.sup.3. The thermogravimetric analysis of the new fish oil polymers exhibits three distinct decomposition stages at 200-340° C., 340-500° C. and >500° C., respectively, with the maximum weight loss rate at approximately 450° C. Single glass-transition temperatures of T.sub.g=30-109° C. have been obtained for the fish oil polymers. As expected, these new polymeric materials exhibit tensile stress-strain behavior ranging from soft rubbers through ductile to relatively brittle plastics. The Young's modulus (E) of these materials varies from 2 to 870 MPa, the ultimate tensile strength ($\sigma$.sub.b) varies from 0.4 to 42.6 MPa, and the percent elongation at break ($\varepsilon$.sub.b) varies from 2% to 160%. The failure topography indicates typical fracture mechanisms of rigid thermosets, and the unique fibrillation on the fracture surface gives rise to relatively high mechanical properties for the corresponding NFO polymer. The fish oil polymers not only exhibit thermophysical and mechanical properties comparable to petroleum-based rubbery materials and conventional plastics, but also possess more valuable properties, such as good damping and shape memory behavior, which most petroleum-based polymers do not possess, suggesting numerous promising applications of these novel fish oil-based polymeric materials.

DETD [0296] The Norway fish oil ethyl ester (NFO) used was Norwegian Pronova EPAX 5500 EE, Bergen, Norway. The conjugated NFO (CFO) was prepared from the NFO in our laboratory by using Wilkinson's catalyst [RhCl(PPh.sub.3).sub.3]. The degree of conjugation was calculated to be about 90 mol %. The triglyceride fish oil (TFO) is Norwegian Pronova

EPAX 5500 TG, Bergen, Norway. Styrene and divinylbenzene (80 mol % DVB and 20 mol % ethylvinylbenzene) have been purchased from Aldrich Chemical Company and used as received. The distilled grade boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2) used to initiate cationic polymerization of the various fish oils was also supplied by Aldrich.

DETD [0298] The polymeric materials have been prepared by the cationic copolymerization of NFO, CFO or TFO with ST and DVB initiated by BFE. The desired amounts of ST and DVB were added to the fish oil. The total amount of reactants was around 50 grams. The reaction mixture was vigorously stirred, followed by the addition of an appropriate amount of BFE initiator. The reaction mixture was then injected into a Teflon mold, which was sealed by silicon adhesive and heated for a given time at the appropriate temperatures, usually 12 hours at room temperature, followed by 12 hours at 60° C. and then 24 hours at 110° C. The yields of resulting polymers are essentially quantitative. The nomenclature adopted in this work for the polymer samples is as follows: NFO, CFO and TFO represent fish oil ethyl ester, conjugated fish oil ethyl ester and triglyceride fish oil, respectively; ST and DVB are the styrene and divinylbenzene comonomers; BFE is the boron trifluoride diethyl etherate initiator. For example, NFO49-ST33-DVB15-BFE3 corresponds to a polymer sample prepared from 49 wt % NFO, 33 wt % ST, 15 wt % DVB and 3 wt % BFE initiator. Since the amount of ethylvinylbenzene present in the DVB is minimal, we have omitted it from our nomenclature to avoid confusion.

DETD [0342] A variety of new polymeric materials ranging from elastomers through ductile to rigid plastics have been prepared from the cationic copolymerization of NFO, CFO or TFO with ST and DVB initiated by BFE. These thermosetting polymers possess crosslink densities ranging from 1.1+10.sup.2 to 2.5+10.sup.3 mol/m.sup.3, and glass-transition temperatures ranging from 30 to 109° C. Although the materials are composed of fish oil-ST-DVB copolymers with various segmental compositions, all of the components are thermodynamically miscible in a single phase. The new polymers appear to be thermally stable at temperatures lower than 200° C. A multiple thermal decomposition behavior is observed with the maximum weight loss rate at approximately 450° C., which is inherently associated with the compositions and structures of the bulk polymers.

DETD [0349] The natural oils used in this study were food-grade soybean oil and LoSatSoy oil commercially available in supermarkets, which were used without further purification. Conjugated LoSatSoy oil was prepared by the rhodium-catalyzed isomerization of regular LoSatSoy oil. The percent conjugation was calculated to be approximately 100%. Styrene, divinylbenzene, norbornadiene and dicyclopentadiene were purchased from Aldrich Chemical Company, and used as received. The distilled grade boron trifluoride diethyl etherate (BF.sub.3OEt.sub.2) used to initiate cationic polymerization of the various soybean oils was also supplied by Aldrich. Norway Pronova fish oil ethyl ester (EPAX 5500 EE) and soybean oil methyl esters (Soygold-1100, Soygold-2000 and a Soygold methyl ester prepared from LoSatSoy oil, AG Environmental Products, L.L.C.) were used to modify the original initiator, boron trifluoride diethyl etherate.

DETD [0376] FIGS. 15 and 16 show the temperature dependence of the storage moduli E' and loss factors tan $\delta$ for LoSatSoy oil polymers prepared by varying the divinylbenzene concentration while the total concentration of the comonomers styrene plus divinylbenzene remains constant. It is known that divinylbenzene is an effective crosslinking agent for cationic copolymerizations The data summarized in

FIGS. 15 and 16 are typical of how the dynamic mechanical properties change with a high degree of crosslinking. The polymer LSS45-ST42-DVB05-(NF05-BFE3) shows very low moduli, and its loss factor shows a very sharp peak at about 43° C. As the divinylbenzene concentration increases in the original composition, the resulting polymers have storage moduli that dramatically increase over the whole temperature range studied. This results because the degree of crosslinking increases with increasing divinylbenzene concentration. As molecular motions become more and more restricted, the amount of energy that can be dissipated throughout the polymer specimen decreases dramatically. Therefore, the loss factor peak positions of the polymers shift to higher temperatures. The tan δ intensities also diminish. In the meanwhile, a significant broadening of the α-relaxation is observed. At an extremely high level of crosslinking, the tan δ peak almost disappears. The broadening of the glass-to-rubber transition region seen in FIG. 16 may be due to a broader distribution in the molecular weight between crosslinks or some other kinds of heterogeneity in the network structure.

DETD [0391] A variety of new polymeric materials ranging from soft rubbers to hard, tough and brittle plastics have been prepared from cationic copolymerization of regular soybean oil, low saturation soybean oil (LoSatSoy oil) or conjugated LoSatSoy oil with styrene and divinylbenzene initiated by boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2) or related modified initiators according to various embodiments of the invention.

DETD [0396] A series of new shape memory polymers have been synthesized by the cationic copolymerization of regular soybean oil and/or low saturation soybean oil (LoSatSoy oil), and/or conjugated LoSatSoy oil with styrene and divinylbenzene, norbornadiene or dicyclopentadiene initiated by boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2) or related modified initiators. The shape memory polymers created by the processes described in this application are implemented into a variedy of industrial products. These industrial products are used in applications in civil construction (e.g., rivets, gaskets, tube joints, etc.), in mechanics and manufacturing applications (e.g., automatic valve shrinkable casing tubes, shock proof devices, joint devices, e.g., materials, etc.), in electronics and communications applications (e.g., electromagnetic shield materials, cable joints, etc.), for applications in printing and packaging (e.g., shrinkable films, trademarks, laminate covers, etc.), in medical equipment applications (e.g., bandages, splints, orthopedical devices, blood vessel dilations devices, etc.), for household uses (e.g., table wares, neckties, artificial flowers, shower heads, etc.), for recreational uses and sports (e.g., stationary, toys, etc,) and a wide variety of other uses as would be understood by those of skill in the art.

DETD [0400] We have developed a series of new random copolymers prepared by the cationic copolymerization of regular soybean oil (SOY), low saturation soybean oil [LoSatSoy oil (LSS)], or conjugated LoSatSoy oil (CLS), with various alkene comonomers, including styrene (ST), divinylbenzene (DVB), norbornadiene (NBD) and dicyclopentadiene (DCP). A wide variety of viable chemically crosslinked polymeric materials have been obtained, ranging from elastomers through tough to relatively brittle plastics. These new soybean oil polymers not only exhibit competitive thermophysical and mechanical properties, but also possess very good damping properties over wide temperature and frequency ranges. By deliberately designing the structures, the soybean oil polymers possess stable crosslinked networks, as well as high T.sub.g's, well above the ambient temperature.

DETD [0402] The soybean oils used in this study can be regular food-grade soybean oil (SOY) and low saturation soybean oil [LoSatSoy oil (LSS)], both commercially available in supermarkets and used without further purification. Conjugated LoSatSoy oil (CLS) has been prepared by the rhodium-catalyzed isomerization of LSS in our laboratory. The percent conjugation of the CLS has been calculated to be approximately 100%. The compositions of the three different soybean oils used in this study are listed in Table 35. ST, DVB (80% and 20% ethylvinylbenzene), NBD and DCP have been purchased from Aldrich Chemical Company and used as received. The distilled grade boron trifluoride diethyl etherate (BFE) used to initiate cationic polymerization of the various soybean oils was also supplied by Aldrich. Norway Pronova fish oil ethyl ester EPAX 5500 EE (NFO) was used to modify the original BFE initiator.

TABLE 35

Compositions of the various triglyceride soybean oils
% fatty acids.sup.b

| Entry | Soybean oil | Type | number.sup.a | C16:0 | C18:0 | C18:1 | C18:3 |
|---|---|---|---|---|---|---|---|
| 1 | Soybean oil (SOY) | non-conjugated | 4.5 | 10.5 | 3.2 | 22.3 | 54.4 | 8.3 |
| 2 | LoSatSoy oil (LSS) | non-conjugated | 5.1 | 4.5 | 3.0 | 20.0 | 63.5 | 9.0 |
| 3 | Conjugated LoSatSoy oil (CLS) | conjugated | 5.1 | 4.5 | 3.0 | 20.0 | 63.5 | 9.0 |

.sup.aThe average number of carbon-carbon double bonds per triglyceride has been calculated by .sup.1H NMR spectral analysis.

.sup.bFor example, C18:2 represents the fatty acid (ester), which possesses 18 carbons and 2 C.dbd.C bonds.

DETD [0404] The polymeric materials have been prepared by the cationic copolymerization of SOY, LSS or CLS with ST and DVB, NBD or DCP initiated by BFE or related modified initiators. The detailed reaction procedures have been described elsewhere. The nomenclature adopted in this work for the polymer samples is as follows: SOY, LSS and CLS represent regular soybean oil, LoSatSoy oil and conjugated LoSatSoy oil, respectively; ST is the styrene comonomer; DVB, NBD and DCP represent divinylbenzene, norbornadiene and dicyclopentadiene comonomers used as crosslinking agents. BFE is the initiator boron trifluoride diethyl etherate; NFO is Norway fish oil ethyl ester. For example, a polymer sample prepared from 45 wt % LSS, 32 wt % ST, 15 wt % DVB and 8 wt % NFO-modified BFE initiator (5 wt % NFO plus 3 wt % BFE) is designated as LSS45-ST32-DVB15-(NFO5-BFE3). Since the amount of ethylvinylbenzene present in the DVB is minimal, we have omitted it from our nomenclature to avoid confusion.

DETD [0421] A series of new polymers have been prepared by the cationic copolymerization of SOY, LSS, and/or CLS with ST and DVB, NBD or DCP initiated by the BFE initiator or related modified initiators. The shape memory properties of the soybean oil polymers have been investigated in relation to the chemical stoichiometry, and the type of the oil and comonomers employed. The shape memory properties are closely related to the crosslinking densities and glass transition temperatures. By achieving appropriate combinations of crosslink densities and glass transition temperatures through structural design of the polymer chain rigidity, soybean oil polymers exhibiting good shape memory effects with high D, FD and R

results can be prepared. In addition, these new shape memory polymers have also been found to show good reusability.

DETD [0422] New polymeric materials with efficient damping characteristics have been prepared by the cationic copolymerization of regular soybean oil, low saturation soybean oil, i.e. LoSatSoy oil, or conjugated LoSatSoy oil with styrene and divinylbenzene, norbornadiene or dicyclopentadiene initiated by boron trifluoride diethyl etherate (BF.sub.3.OEt.sub.2) or related modified initiators. The effects of the stoichiometry, the type of soybean oil and the alkene comonomer on the damping behavior of the resulting polymers have been investigated.

DETD [0427] New thermosetting polymers can be prepared by the cationic copolymerization of regular soybean oil (SOY), low saturation soybean oil [LoSatSoy oil (LSS)], or conjugated LoSatSoy oil (CLS), with various alkene comonomers, including styrene (ST), divinylbenzene (DVB), norbornadiene (NBD) and dicyclopentadiene (DCP). By varying the stoichiometry and the type of oil and alkene, a wide variety of interesting polymeric materials have been obtained ranging from elastomers to tough and relatively brittle plastics. These new polymers exhibit physical and mechanical properties that are comparable to those of commercially available elastomers and conventional plastics, and may serve as replacements for petroleum-based polymer materials in many applications. These bulk polymeric materials are composed of a crosslinked soybean oil-ST-DVB copolymer and a certain amount of less highly crosslinked/branched soybean oil-ST-DVB copolymer, which interpenetrate each other in a manner analogous to the interpenetrating polymer networks (IPNs). The ester groups directly attached to the polymer backbone have already been found to make a significant contribution to the high damping of these polymeric materials. Thus, new bulk polymers with appropriate compositions exhibit good damping abilities, just like other IPN damping materials. These new soybean oil-based polymers are particularly attractive for a study of the effect of chemical structure on damping, since it is possible to change their T.sub.g's over a wide range of temperatures (0-100° C.).

DETD [0429] The soybean oils used can be regular food-grade soybean oil (SOY) and low saturation soybean oil [LoSatSoy oil (LSS)], both commercially available in supermarkets and used without further purification. Conjugated LoSatSoy oil (CLS) has been prepared by the rhodium-catalyzed isomerization of LSS in our laboratory. The percent conjugation of the CLS has been calculated to be approximately 100%. ST, DVB (80% and 20% ethylvinylbenzene), NBD and DCP have been purchased from Aldrich Chemical Company and used as received. The distilled grade boron trifluoride diethyl etherate (BFE) used to initiate cationic polymerization of the various soybean oils was also supplied by Aldrich. Norway Pronova fish oil ethyl ester EPAX 5500 EE (NFO) was used to modify the original BFE initiator.

DETD [0431] The polymeric materials have been prepared by the cationic copolymerization of SOY, LSS or CLS with ST and DVB, NBD or DCP initiated by BFE or related modified initiators. The detailed reaction procedures have been described elsewhere. The nomenclature adopted in this work for the polymer samples is as follows: SOY, LSS and CLS represent regular soybean oil, LoSatSoy oil and conjugated LoSatSoy oil, respectively; ST is the styrene comonomer; DVB, NBD and DCP represent divinylbenzene, norbornadiene and dicyclopentadiene comonomers used as crosslinking agents. BFE is the initiator boron trifluoride diethyl etherate; NFO is Norway fish oil ethyl ester. A polymer sample prepared from 45 wt % LSS, 32 wt % ST, 15 wt % DVB and 8 wt % NFO-modified BFE initiator (5 wt % NFO plus 3 wt % BFB) is designated

LSS45-ST32-DVB15-(NFO5-BFE3). Since the amount of ethylvinylbenzene present in the DVB is minimal, we have omitted it from our nomenclature to avoid confusion.

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| ACCESSION NUMBER: | 2005:293680 USPATFULL | | | |
| TITLE: | Cationic polymerizable adhesive composition and anisotropically electroconductive adhesive composition | | | |
| INVENTOR(S): | Yamaguchi, Hiroaki, Hachioji-shi, JAPAN<br>Akiyama, Ryota, Hachioji-city, JAPAN | | | |
| | NUMBER | KIND | DATE | |
| PATENT INFORMATION: | US 2005256230 | A1 | 20051117 | |
| APPLICATION INFO.: | US 2003-502501 | A1 | 20030219 | (10) |
| | WO 2003-US4944 | | 20030219 | |
| | | | 20040723 | PCT 371 date |
| | NUMBER | | DATE | |
| PRIORITY INFORMATION: | JP 2002-99071 | | 20020401 | |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | APPLICATION | | | |
| LEGAL REPRESENTATIVE: | 3M INNOVATIVE PROPERTIES COMPANY, PO BOX 33427, ST. PAUL, MN, 55133-3427, US | | | |
| NUMBER OF CLAIMS: | 7 | | | |
| EXEMPLARY CLAIM: | 1-6 | | | |
| LINE COUNT: | 670 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM Cationic polymerizable compositions making use of cationic polymerization are being widely used, for example, in the field of coating material, ink, and adhesive. Particularly in the use for an adhesive, the cationic polymerizable composition is advantageous because of its high curing rate and freeness of oxygen hindrance. However, a cationic polymerization catalyst is required to initiate the cation polymerization reaction. Also, in a composition wherein a compound having the cationic polymerizability and a cationic polymerization catalyst coexist, there arise problems that gelling occurs during the storage because of its high reactivity and a pot life is reduced.

SUMM To enhance the storage stability of the cationic polymerizable composition, for example, stabilizers have hitherto been used. The stabilizer in the cationic polymerizable composition is generally an electron-donating Lewis base. A strong Lewis base replaces the counter anions of the cationic polymerization catalyst, thereby reducing the activity of the catalyst itself. On the other hand, a comparatively weak Lewis base traps a Lewis acid generated from the catalyst and cationic species during the polymerization, thereby delaying the reaction. By selecting such a Lewis base as the stabilizer and adding it to the cationic polymerizable composition, desired reactivity is obtained and the storage stability is improved (Japanese Unexamined Patent Publication (Kokai) No. 4-227625; Japanese National Publication (Kohyo) No. 8-511572; and Japanese Unexamined Patent Publication (Kokai) No. 5-262815).

DETD The cationic polymerization catalyst is a compound of producing cationic active species such as Lewis acid upon irradiation with ultraviolet rays or under heating and catalyzing a ring-opening reaction of the epoxy ring. Examples of this cationic polymerization catalyst include aryldiazonium salts, diaryliodonium salts, triarylsulfonium salts, triarylselenium salts, and iron-arene complexes. Among these, iron-arene complexes are particularly preferred because of their thermal stability, and specific examples thereof include xylene-cyclopentadienyl iron(II)(tris(trifluoromethylsulfonyl)methide, cumene-cyclopentadienyliron(II) hexafluorophosphate, bis(etha-mesithylene)iron(II)tris(trifluoromethylsulfonyl)methide, and bis(ethamesithylene) iron(II) hexafluoroentimonate. In the adhesive film of the present invention, the storage stability can be exhibited even in a visible range (from 360 to 830 nm) and it is particularly advantageous when using a cationic polymerization catalyst having an absorption wavelength in this visible range. The other examples of cationic polymerization catalyst are those disclosed in Japanese National Publication (Kohyo) No. 8-511572, Japanese National Publication (Kohyo) No. 11-501909, and Japanese Unexamined Patent Publication (Kokai) No. 59-108003.

DETD The cationic polymerizable adhesive composition and anisotropically electroconductive adhesive composition of the present invention may contain other additives and modifiers according to the end use in addition to the above-described components. Examples of the additives which can be added to the adhesive compositions include a cationic polymerization accelerator (for example, di-tert-butyl oxalate), an antioxidant (for example, hindered phenol-based antioxidant), a coupling agent (for example, a silane coupling agent such as γ-glycidoxypropyl trimethoxysilane and β-(3,4-epoxycyclohexyl)ethyl trimethoxysilane), and a stabilizer. The stabilizer suppresses or inhibits the cationic polymerization reaction by trapping the Lewis acid or the like serving as cationic active species in the cationic polymerization, and specific examples thereof include crown ethers such as 15-crown-5,1,10-phenanthroline and derivatives thereof, toluidines such as N,N-diethyl-meta-toluidine, phosphines such as triphenylphosphine, 2,2'-dipyridyl, and acid amides.

DETD 1.0 g of an alicyclic epoxy resin (Cyracure UVR6128, trade name, produced by Union Carbide Japan Ltd., epoxy equivalent: 200), 5.0 g of a glycidyl group-containing phenol-novolak epoxy resin (Epikote 154, trade name, produced by Yuka Shell Epoxy Ltd., epoxy equivalent: 178), 4.0 g of a phenoxy resin (PKHC, produced by Phenoxy Associates Ltd., OH equivalent: 284) and 0.009 g of N,N-dimethyl-m-toluidine were mixed with 11.0 g of a mixed organic solvent of a good solvent and a poor solvent shown in Table 1 and the mixture was stirred until a uniform solution was formed. Thereto, electroconductive particles (particles obtained by providing a nickel layer on the surface of a divinylbenzene copolymer and further stacking gold thereon, average particle size: 5 μm) were added to occupy 3% by volume in the final solid and continuously stirred until the electroconductive particles were thoroughly dispersed. Separately, 0.06 g of a cationic polymerization catalyst (bis(eta-mesitylene)iron(II)-tris(trifluoromethylsulfonyl)methide), 0.2 g of a silane coupling agent (Silane Coupling Agent A1187, produced by Nippon Unicar Co., Ltd., γ-glycidoxypropyl trimethoxysilane) and 0.6 g of a good solvent were mixed and stirred until a uniform solution was formed, and this solution was added to the dispersion solution prepared above, followed by further stirring. The thus-obtained dispersion solution of the anisotropically electroconductive adhesive composition was applied onto a silicone-treated polyester film as a separator, using a knife coater

and then dried at 65° C. for 10 minutes to obtain an anisotropically electroconductive adhesive film having a thickness of 25 μm (E1 to 5).

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               SET PLURALS ON PERM

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                OR DI(1W) ISOPROPENYL BENZENE OR DIISOPROPENYLBENZENE)
L2        32448 SEA ABB=ON  PLU=ON  (POLY? OR COPOLY?)(S)(INDAN### OR INDEN###)

L3         1068 SEA ABB=ON  PLU=ON  L1 AND L2
L4          922 SEA ABB=ON  PLU=ON  (DIVINYL BENZENE# OR DIVINYLBENZENE# OR
                DIVINYL NAPHTHALENE# OR DIVINYLNAPHTHALENE# OR DI(1W) ISOPROPEN
                YL BENZENE OR DIISOPROPENYLBENZENE)(S)(INDAN## OR INDEN##)
L5          201 SEA ABB=ON  PLU=ON  L3 AND L4
L6           41 SEA ABB=ON  PLU=ON  L5 AND CATION?(4A)(POLY? OR INITIAT? OR
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     FILE 'USPATFULL, USPATOLD, USPAT2, CAPLUS, JAPIO' ENTERED AT 14:59:27 ON
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                OR CATALY?))(S)(DIVINYL BENZENE# OR DIVINYLBENZENE# OR DIVINYL
                NAPHTHALENE# OR DIVINYLNAPHTHALENE# OR DI(1W) ISOPROPENYL
                BENZENE OR DIISOPROPENYLBENZENE)
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                OR CATALY?))(S)(DIELECTRIC CONSTANT)
L9             4 SEA ABB=ON  PLU=ON  L7 AND L8
                D L9 1-4 IBIB ABS
L10       19010 SEA ABB=ON  PLU=ON  (SOLVENT# OR MEDIUM OR MEDIA OR DILUENT#)(6
                A)(DIELECTRIC CONSTANT)
L11           17 SEA ABB=ON  PLU=ON  L7 AND L10
                D L11 1-17 IBIB ABS
                D HSI
L12         4145 SEA ABB=ON  PLU=ON  CATIONIC?(S)(LEWIS(4A) ACID)
L13        17286 SEA ABB=ON  PLU=ON  CATIONIC?(S)(INITIAT?)
L14         1676 SEA ABB=ON  PLU=ON  L12 AND L13
L15           22 SEA ABB=ON  PLU=ON  L14 AND L7
                D L15 1-22 IBIB ABS
                D L15 9 IBIB HIT
                D L15 7 IBIB HIT


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     FILE COVERS 1971 TO PATENT PUBLICATION DATE: 28 Feb 2008 (20080228/PD)
     FILE LAST UPDATED: 28 Feb 2008 (20080228/ED)
     HIGHEST GRANTED PATENT NUMBER: US7337473
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CA INDEXING IS CURRENT THROUGH 28 Feb 2008 (20080228/UPCA)
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HIGHEST GRANTED PATENT NUMBER: US2008045745
HIGHEST APPLICATION PUBLICATION NUMBER: US2008051086
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